Presidential Address
ON
ABDOMINAL EMERGENCIES

DELIVERED BEFORE THE MANCHESTER MEDICAL SOCIETY.

BY E. STANMORE BISHOP, F.R.C.S.ENG.

THE list of abdominal emergencies is a fairly long one, and includes:

Accidental injuries and rupture of viscera.
Post-partum haemorrhage.
Ruptured ectopic gestation.
Twisted ovarian pedicle.
Strangulated hernia.
Intestinal kinks and adhesions.
Appendicitis.
Acute pancreatitis.
The passage of renal or biliary calculi; and
Perforation of gastric and duodenal ulcers.

It would obviously be impossible to attempt to deal with all, nor do I propose to do so. Certain subjects must be omitted entirely, and in each of the rest only a few points can be taken; to one only, and that the last, perhaps a little more detail may be possible.

In the first place, it is possible to put on one side those cases of injury to abdominal viscera of which there is a clear history, such as bullet and knife wounds or the rupture of viscera in consequence of the passage of heavy bodies across the abdomen, etc. A clear diagnosis of the extent of injury may present difficulties, may indeed be impossible before operation; but at the present day their treatment by immediate laparotomy, with such subsequent work as may be required in each individual case, is clearly admitted and need not now detain us.

There is, however, another general class which cannot be dealt with so summarily, and the possibility of which confronts the surgeon in almost every case. I refer to the neuromimetic class. In these days of suggestive advertising of quack remedies, it is easy for any one to become obsessed with the idea that his or her own case presents exactly those symptoms which are presented as characteristic of a dangerous disease, and the neuromimetic mind easily fills in those that are wanting. A little knowledge is here peculiarly a dangerous thing.

But it is necessary also not to lose sight of the opposite side; even a neurotic person may suffer from a genuine abdominal lesion, and the real symptoms may be overlooked or not accorded their full value because of their possessor's known tendency to nervous exaggeration. A clear diagnosis is best obtained by entire reliance upon objective signs, which fortunately now are not wanting.

Post-partum Haemorrhage.

I mention this merely in order if possible to emphasize the views as to treatment, previously elaborated in the *Practitioner* and elsewhere; lapse of time and further experience only still further confirm them, and I have received communications from all over the world endorsing their truth from the writers' own personal experience; during last June, Major Giffard, of the Indian Medical Service, who is in charge of the Government Hospital in Madras, was in England and told me that for three years, after reading some of the earlier articles, treatment solely by pelvic elevation and aortic compression had been adopted in that hospital by him with complete success; that whereas before its adoption several cases had been lost from this cause, since the plan had been introduced there had not been a single death, and that, he considered, was all the more remarkable since it had been carried out with native assistants, who, as he remarks, are inclined to become flustered in such an event. He had treated during those three years, 7,000 cases of midwifery.

Ruptured Ectopic Gestation.

The next two conditions are not so evident. Rupture of a pregnant tube might be mistaken for rupture of a gastric or duodenal ulcer, or even for a burst appendical abscess, but the state of the pulse and the mucous membranes will quickly distinguish them. Nothing increases the rapidity of the pulse so much or so quickly as loss of blood, and as in appendix cases there is no appreciable blood lost, whilst in gastric ulcer the blood lost is either vomited or passed by bowel, and so easily recognized, the extreme rapidity of the pulse in ruptured ectopic pregnancy would almost alone serve to distinguish it, and this especially if seen early after the occurrence. The colour of the lips and finger-nails also is very different—in the one they are naturally blanched, in the other two they alter but little; whilst if seen later, the expression of the face will attract attention; in appendical abscess and gastric ulcer the fluids set free irritate the peritoneum, and the peritonitic face is produced. An expression of extreme anxiety comes over the features, which in itself is characteristic. I have called it a "hunted" expression; the patient looks from face to face in search of a help that she knows beforehand she will not find; once seen, this can hardly be mistaken for anything else. In the other case, the blood not being an irritant, the face is more placid; there is anxiety, too, but it is not of the urgent kind which is seen in the others; so that from the face and the pulse alone a diagnosis might almost be made. But the respirations also differ. In ectopic cases there is first yawning, sighing breathing, then gasping, for want of sufficient oxygen in the tissues; in the other two the respirations may be hurried, but it is a sort of "busy" breathing, not gasping or yawning. Of course the history, if it can be obtained and is reliable, is of great help, but at times like these one is often liable to be misled, not by want of information, but by too much.

If the occurrence of sudden pain can be obtained, occurring in a woman otherwise in fair health, and followed by the collapse witnessed, with soft abdominal walls and a rapid pulse, there will be sufficient ground for a strong suspicion of this condition; if to this is added the sensation of a thrill or a doughy swelling in Douglas's pouch, whilst the slightest irregularity during the preceding one, two, or three periods of menstruation can be elicited, the diagnosis is sufficiently certain to justify immediate exploration.

In any such case it is better not to wait for the collapsed condition to pass off, as the patient will the sooner recover if a stop is at once put to further loss of blood.

At the present time all our efforts are of course directed so as to anticipate the occurrence of rupture and to remove the unbroken ectopic sac, and this, thanks to increased experience of the bimanual method of examination, may often be done. I have succeeded in removing the intact ovum and tube in three cases, whilst in a fourth the tube evidently had given way during her journey from ward to theatre, since, though blood was issuing from a rent in the tube, only half an ounce of blood was found in Douglas's pouch.

In acute peritonitis there immediately follows a contraction of that segment of the abdominal wall which overlies the area of inflamed serous membrane. This contraction of the muscular wall is automatic, due to reflex action, and, as I have for some years suggested, is analogous to the contraction observed in joint inflammations, which Hilton showed long ago must inevitably follow any inflammatory irritation of the serous lining. The serous membrane of a joint, the muscles acting upon that joint, and the skin over it, are all connected by a nerve arc, through which the stimulus arising from the afferent nerves in the serosa pass, via the spinal centre controlling both, to the efferent nerves supplying the muscles, which thereupon at once contract, holding the joint firmly in one position, so that no movement of it can intensify the mischief within. It is, I conceive, easy to show that this law applies with equal force to what may be called the "abdominal joint." The word "joint" has long been supposed to connote the presence of bone and cartilage; but these are by no means necessary to its existence. The essential elements of a joint are:

1. Two surfaces capable of movement the one over the other.
2. Muscles capable of effecting that movement.
3. A serous lining membrane which secretes sufficient fluid to render that movement easy and smooth.
4. A nervous arc connecting these several parts.

All these are to be found in the abdomen, and experience shows that Hilton's law is obeyed here just as in any other joint. In the knee we judge of the amount of serosal inflammation by the fixity of the bones held by the automatically contracted muscles; in the abdomen by the contraction of the muscles themselves.

Twisted Ovarian Pedicle.

An ovarian tumour with a twisted pedicle does not present much difficulty; if a mass has previously been recognized the sudden occurrence of great pain followed quickly by tenderness of that mass, which now rapidly enlarges, points plainly enough to what has occurred. At first the muscles above will be supple, but adhesive peritonitis is almost certainly to be set up as soon as the blood is shut off and the tumour, because dead, becomes a foreign body; then muscular rigidity will be added to the picture. If there is no previous history of a recognizable growth it will, if present, be still in the pelvis and recognizable by recto-bimanual examination.

Intestinal Kinks and Adhesions.

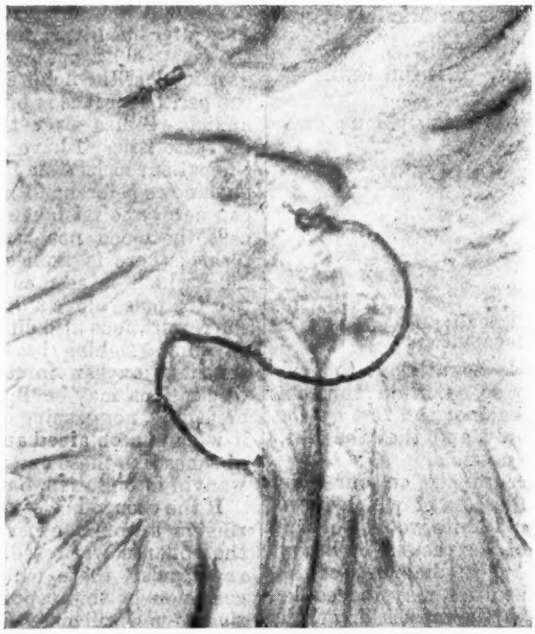
It is not necessary to say anything as to strangulated hernia, but apart from hernia there may be obstruction from adhesion and kinking of bowel internally. Such a case was seen with the late Dr. Mason of Moss Side.

A lady, fourteen days after confinement was suddenly attacked by vomiting; there was not much pain at first, though later she complained of some in the hypogastrium. The patient was practically convalescent from her labour, and had been allowed to rise the day before. The vomiting was persistent, and smelt faecally; the abdomen began to distend; there was absolute coprostasis. Enemata brought away the contents of the lower bowel, but nothing more. The diagnosis was provisionally made by relying upon the absence of rigidity, the absence of any recognizable tumour or external hernia, the rapid distension, and the fact that the vomiting preceded the pain, which was never very acute. It was evident that some small intestine obstruction was present, whether from band or kink it was impossible to determine, and the abdomen was opened. A coil of small intestine was found adherent deep down in Douglas's pouch, which was loosened and brought up; the vomiting at once ceased, and did not return. She was quickly well.

I have seen two similar cases recently.

Appendicitis.

This is one of the most prominent of the sudden emergencies met with in the abdomen, but as it has been hardly possible to take up a medical journal during the last year without finding a long article dealing with this subject, I shall not say much about it. The rapidity with which danger arises in some first cases is extreme. In one seen during the last month with Dr. Davie, of Fallowfield, the first symptom occurred on Friday; pain was felt in the epigastrium, but was attributed, as is so often the case, to unsuitable food, and the mother devoted Saturday to purgatives. Dr. Davie was first sent for on Sunday morning; the same afternoon the abdomen was opened, and an almost entirely gangrenous appendix found. Sero-purulent fluid welled up from the pelvis, necessitating drainage by a long tube passing into Douglas's pouch. The patient was placed in the Fowler position and treated by continuous proctoclysis, with the result that in a fortnight she was out of bed, and returned home well at the end of three weeks. I mention this case partly for the reason already given and partly to call attention to the extremely good results obtainable by Murphy's method of treatment; it has in many cases which I have seen apparently turned the scale in severe peritoneal inflammation.



Crateriform ulcer formed upon line of union after excision of a previous ulcer. The walls of the stomach had been united by two layers of continuous suture; the inner of catgut, the outer of iron dyed silk. The latter is seen lying free on the mucosal surface, attached only by a knot, also on the inner surface. This specimen I owe to the courtesy of Dr. Andrewes of St. Bartholomew's Hospital.

But appendicitis appears to be well understood and treated in Lancashire. Reference to the Registrar-General's reports will show that its mortality is much lower in proportion to the population than in London, and that the combined mortality in London and the three counties chosen for comparison is less than one-third of the entire mortality of England and Wales.

I must pass over the passage of renal and biliary calculi, as well as acute pancreatitis.

Intussusception.

This is the last but one of these conditions to which I wish to refer; its symptoms are well known, but it may be well to call attention to a method of obtaining one, always necessarily present and characteristic, which has been found useful. When intussusception takes place the mesentery of the entering intestine is compressed. Such pressure acts first and chiefly upon the mesenteric veins; as a consequence some of the smaller vessels will give way; the blood effused must find its way into the lumen of the bowel, and tends to collect, it may be in very small quantity, above the sphincters. Inasmuch as peristalsis below the lesion is disturbed, it may not appear outside, but a finger gently passed above the sphincter will return blood-stained. In this way very small amounts of blood may be recognized.

Chronic crateriform ulcer of stomach (saddle ulcer), lying transversely across the lesser curvature. Shows "terracing." There are two small perforations through the peritoneal coat. This specimen I owe to the courtesy of Professor Lorrain Smith, of the Victoria University.

Perforation of Gastric and Duodenal Ulcers.

When the mortality of gastric and duodenal ulcer is considered it is evident that in this county we need specially to direct our attention to this fatality. Since 1901 gastric ulcer has been distinguished in the Registrar-General's *Reports;* before that time it was included in the deaths from peritonitis or from indefinite causes, but during the eight years up to the report for 1908, which has just been published, the deaths for England and Wales have averaged 1,700. Of these, London furnished 250, Lancashire 252, Cheshire 39, and the West Riding of Yorkshire 143, so that we stand at the head of the list, no other county in England and Wales having anything like as large a number of deaths from this cause. When it is remembered, also, that only a small percentage of gastric

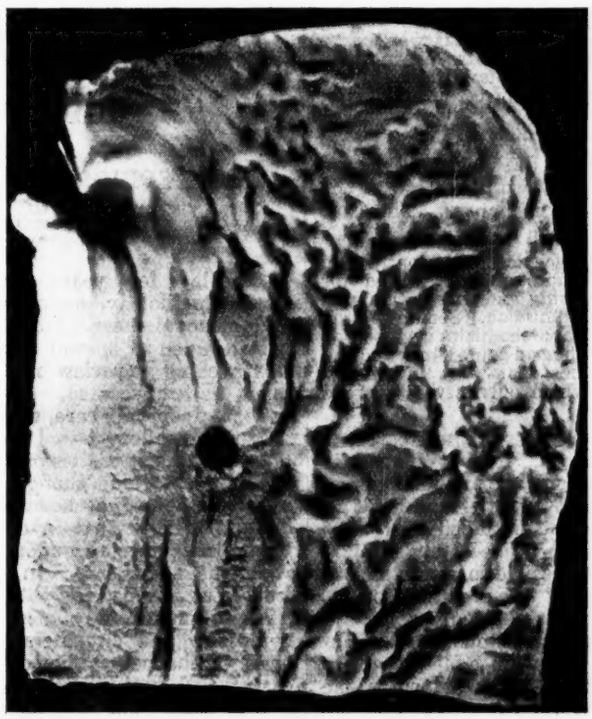
ulcers immediately cause death, but that they do produce a large amount of chronic suffering, the necessity for increased study of this condition is abundantly evident.

Perforation of a gastric or duodenal ulcer is one of the most important of all sudden abdominal emergencies. The sufferers from it usually complain of a sensation of something having yielded in the upper abdomen, followed either immediately or after a short interval by intense pain, which may become so agonizing as to produce marked collapse. The course of events is well shown in the two following cases, one of gastric, the other of duodenal perforation:

A man, aged 37, was admitted to Ancoats Hospital in March, 1909. On the morning of his admission he was feeling in fairly good health. On cross-examination afterwards, at first he would admit to only one week's sensation of some pain after food, later to a hazy "few weeks." He ate a good breakfast at 7.15 a.m. and felt no pain after it. He continued at business until 5.30 p.m., having dined at midday off stewed steak and potatoes. He was performing his toilette previous to departure when something was felt to give way suddenly in the epigastrium. No immediate pain was felt, but there was a sensation of rapidly increasing weakness. As he walked with difficulty down a long room he became short of breath and faint. He sat down and rested. Half an hour after the first sensation severe pain began, also in the upper abdomen, which became steadily worse until, he said, it amounted to agony one and a half hours later. He vomited once; the fluid rejected contained food, but no blood. A doctor was sent for who injected morphine. Relieved by this, he was able to be removed to the hospital.

On examination there, great tenderness, increased by pressure, was found over the entire epigastric region, and there was rigidity of both upper recti, the lower segments being still supple. His temperature had fallen to 96.8°, his pulse to 66, but his respiration was quickened to 36 per minute. He was not at that time in any great pain.

The abdomen was opened five hours after the initial lesion; when the peritoneum was divided gastric contents at once escaped and poured out in great quantity; when sufficient had been removed by sponges the stomach was drawn forward and a round punched-out opening was found, which was surrounded by a whitened bleached appearance, which faded gradually around into the normal colour of the stomach. The tissues, however, were not thickened or indurated. The opening was easily closed by a purse-string suture; drainage was carried out by tubes passed through stab wounds in both loins and above the pubis; the abdominal wound was closed.



Acute "tunnel" ulcer of the stomach. Openings at both ends of equal size, that on the peritoneal surface being sharply cut. No "terracing." This specimen I owe to the courtesy of Mr. Shattock, of the Royal College of Surgeons and St. Thomas's Hospital.

Perforation of the duodenum gives a somewhat similar picture, though a different history.

The case I select is that of a girl aged 19. She was at her work as a mule tenter, when suddenly without any warning, about 4 p.m., she was attacked by violent pain in the epigastrium bringing her to the ground. After a few minutes it became less intense, at the same time sinking to the umbilical level. She had suffered for some months from mild epigastric pain which became worse about one hour after food and was relieved by vomiting; she could also relieve it for a while by eating more food. There had been some loss of weight. After resting about half an hour she walked some hundred and fifty yards to the hospital. When seen the pain was so much less that it was with difficulty that she could be induced to remain, but as both upper recti, and especially the right, were found to be rigid, and there was great tenderness all over the epigastrium, a diagnosis of perforated duodenal ulcer was made. The abdomen was opened four hours after the first appearance of pain, and a pinhole perforation was found on the anterior duodenal wall from which fluid was issuing. The opening was closed and the patient recovered.

By the courtesy of Dr. Andrewes of St. Bartholomew's I am able to show a gastric crateric ulcer in the process of formation. In this case a previous ulcer had been excised three months before death and the healthy stomach wall reunited. The surgeon had used catgut for the internal suture, and this had become digested before complete union of the mucosa had taken place. This coat had therefore retracted at one point, allowing access of gastric juice to the submucosal and muscular layers, with the production of the ulcer seen. This preparation is valuable, since it illustrates not only terraced ulcer formation but several surgical points—the unfitness of catgut for internal suture, for one; one possible cause for jejunal ulcer after gastro-enterostomy, for another—so many of which have been found at the actual junction between stomach and intestine; besides a third, to which I shall presently refer.

Chronic gastric ulceration is not strictly speaking one of the emergencies of the abdomen, but its perforation is. It is therefore admissible as a subject of remark. Patients who suffer from chronic gastric ulcer are usually men and women in middle life. They give a history of long-continued dyspepsia. They dread to eat, since the act is usually followed within an hour by pain, sometimes by vomiting, which gives so much relief that many are in the habit of exciting it for that purpose. The disturbance of their gastric functions reacts upon their nutrition, frequently upon their temper. They become thinner, more irritable, sometimes even morose. Their diet becomes restricted, since various foods are dropped one after another, partly because of their own experience of the pain produced, partly by the advice of their friends or their physician. Rest in bed, absence of worry, and a suitable diet will relieve for a time, but return to normal life and diet is followed by relapse. Their views of life and the future become clouded, they themselves neurasthenic and unhopeful. There seems little doubt that some at least of the suicides for which no cause can be assigned are due to this condition.

Chronic duodenal ulceration gives a similar history, but with one main point of differentiation. There are others of course, but this is the one on which it appears to me most reliance can be placed. I refer to nocturnal pain. Patients suffering from this wake up in the morning about 2 or 3 with a hot burning sensation rather lower than the epigastrium but in the median line, and often also at an opposite point in the back. Almost immediate relief can be obtained by the taking of some alkaline fluid, and they fall asleep again. This symptom is in my experience more valuable than the actual time after a meal at which pain is felt; comparison of cases proved by operation shows great variability in the time of appearance of this pain, in some gastric instances the pain appearing even later after food than in other duodenal ones.

Both gastric and duodenal ulcers appear to be curable by gastro-jejunostomy, but in what remains to be said I shall refer only to gastric ulceration. Such ulceration is not only in itself an evil, but it tends to produce other and more serious results which cannot so easily be remedied. Sonnischen found 14 per cent. of 156 cases of gastric cancer examined *post mortem* in the pathological institute at Kiel undoubtedly developed from ulcer, whilst in a second series Klausa found 26 per cent. Stich declares that ulcer carcinoma constitutes 30 per cent. of gastric cancer. Mayo found 54 per cent. of the cases of gastric

cancer at Rochester in which both the clinical history and pathological examination made it certain that they had originated in ulceration. Robson, in his Bradshaw Lecture, reports 59.3 per cent. of gastric cancer giving a previous history of chronic ulcer.

The good results of gastro-enterostomy in chronic ulcer are now admitted, and every physician who has advised and every surgeon who has practised this operation will have many cases to which they can refer with satisfaction. From my list of 53 I select 2 which will illustrate its effects.

The first was that of a man aged 58, who had suffered for years from dyspepsia. Eight years ago he had a sudden attack of haematemesis and passage of blood by stool; after this there was no more bleeding for several years, although his digestion was always bad, until three years ago, when it returned; he was at that time manager to a large firm, but the effect upon his health was so great that he was obliged to resign his position. For a time he lived quietly, attempting by diet and rest to recover his health, when a third and more profuse loss of blood occurred, causing his friends great anxiety as to his life. His recovery from this was slow, but as soon as he was sufficiently fit he came from London here for the operation. This was done and he returned home. As may be supposed, the loss of his situation, combined with the difficulty of obtaining another at his age, weighed on his mind, and he writes, some months later: "I should almost begin to despair but for the memory of what I have gone through and the constant feeling of thankfulness to be so healthy and strong; it is worth anything to be restored to good health. There has been nothing whatever to report in my condition that is unfavourable. I have not once been sick (however slightly), but am certainly stouter, and my appetite keeps always normal."

The other I mention as showing that good results are persistent, though, as several *x*-ray drawings and photographs which I have to show appear to demonstrate, the new stoma alters in its action as time elapses. This case is one of a girl who was operated upon in 1907.

Shortly, the case was one of pyloric ulcer with contraction and consequent gastrectasia. Symptoms had existed for several years; the pain was increasing and emaciation was great. She weighed only 6 st. on admission. Soon after the operation she began to gain weight; the pain disappeared almost directly after it; a year later she had gained 4 st., and she writes now, two and a half years since operation: "I am now better than I ever was in my life, which only serves to prove how successful was my operation."

It is interesting to note the progress of these cases as shown by Roentgen-ray observations. At first the gastric contents pass almost at once through the artificial stoma. In one case observed within eight days (it is difficult to obtain an observation earlier) the bismuthized food went through in large gulps and almost immediately so filled the small intestine that it was impossible to obtain a clear photograph. Later, in the course of two or three months, a time which varies in different cases, only a certain amount passed at once, and then the stomach was contracted, closing the opening, and allowing a clear space to become visible between the bismuth still retained in the stomach and that which had passed through the stoma. It was as if the intestine was able to signal to the stomach when it had received the amount which it was capable of digesting. After a time, also variable, the stoma reopened and allowed still more to pass, closing again when sufficient had entered the jejunum. At a later period in the history of the case the food began again once more to pass by the pylorus, less and less went via the stoma, more and more by the natural passage. At last—at least, in some cases—the original condition of things appears to be re-established. That is the impression produced by a study of these photographs and screen observations. No doubt in many cases, especially if the pylorus is organically contracted, the stoma will always remain the route by which gastric contents will find their way onwards, but, as in those in which ulcer is present, pyloric closure is usually due to spasm, which remains until the ulcer is healed, and relaxes when once that source of irritation is removed, it seems probable that these observations reflect the most common course of events.

A natural consequence of this is the question of closure by artificial means of the pylorus at the time of operation, which has been advised by some operators. I have never done this, for two reasons; no doubt the most startling results for good have been observed when exit by the natural route has been entirely stopped by organic closure, but it is doubtful how far such closure can be imitated by artificial means, or advisable if it can be done. As long ago as the time of Travers it was observed that any suture applied outside the intestinal wall tended sooner or later to make its way through into the lumen of the gut; but it has been objected by some that this only resulted with the septic sutures in use at that time. An aseptic suture or ligature, it has been said, will remain. Allow me to call your attention once more to the photograph. The inner suture was catgut, but the outer was iron dyed silk, and was aseptic when applied as it was to the outer wall of the stomach, yet now it is almost loose in its interior. Asepticity of the ligature would therefore appear to have no effect in preventing this. Mucosa if pressed against mucosa will never unite. Unless the actual mechanical pressure of the ligature can be maintained the ultimate result will be a reopening of the pylorus as soon as the thread has worked its way through the tissues of the gut, leaving behind a linear scar in that opening. If the general tendency is to a *restitutio ad integrum*, is it advisable to produce such a scar, which must always hamper the dilatation of the pylorus whilst unable to close it?

An Address
ON
THE TREATMENT OF GASTRIC AND DUODENAL ULCER.*

BY

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IN the last few years much attention has been paid to the pathology, symptoms, and treatment of gastric and duodenal ulcer. Most of the papers published have been devoted to special aspects of the subject. I propose this evening to review briefly the chief methods of treatment now advocated, most of which I have used in patients under my care, with or without the co-operation of surgical colleagues. I shall not burden you with many figures. The statistics of different methods of treatment are of great value, though figures compiled by different observers must not be compared too closely, because we cannot be sure that in each series the individual cases have been selected under the same conditions or even with the same care. In practice, however, when confronted at the bedside with the problem of treatment, we have to make our choice with a greater regard to the symptoms and circumstances of the particular patient than to the percentage of cures reported to have been established by this method or by that.

One conclusion may be reached from a glance at the published papers advocating the various methods of treating gastric ulcer at the present day—namely, that there is no one exclusive way of dealing with this disease. For there are now several large series of cases treated on divergent principles, all showing a low mortality with a large proportion of successes. In these series we note that when one observer has made use of one method, he has usually attained success; this I interpret to mean that success does not depend upon the particular method so much as upon the care and prudence with which it is carried out. Men do well what they do often.

Gastric ulcers are of two types—acute and chronic. The acute gastric ulcer, occurring in well-nourished young anaemic women, is probably one of the easiest diseases to treat successfully; indeed, so striking is the response to treatment, that the doctor may be said in this disease, if in any, to cure the patient. Chronic gastric ulcer, on the other hand, though seldom fatal when carefully treated, is a more difficult complaint.

Diagnosis.

Before making up our minds as to the method of treatment to be adopted we must form an opinion as to the existence of an ulcer, how long it has been there, and whether it is in the cardiac or pyloric end of the stomach or in the duodenum. We must then find out whether

* Read before the Brixton Medical Society.

there have been any previous attacks, what treatment was applied, and with what success. I am not going to speak of diagnosis, but will say that, though there are borderline cases which offer difficulty, in most cases there is but little. Cases of severe haematemesis have been described in which no definite ulcer could be found at an operation or *post mortem*. I am not now referring to the multiple haemorrhagic erosions occurring in a number of toxaemic states, such as pneumonia, appendicitis, and anaemia, and in severe gastritis, but to the vomiting of blood in patients with the symptoms of gastric ulcer. Recently Dr. Hale White has described this in this country under the title "gastrotaxis." I shall include such cases of haematemesis with gastric symptoms in young people as cases of acute gastric ulcer; in some of them the existence of a little ulcer involving a vessel has been proved by minute examination. I have seen such myself. The great difficulty of demonstrating a small lesion in the rugose lining of the stomach must be remembered. At an operation it is impossible to be sure that a small ulcer or fissure is not present, and after death it is quite easy to miss one, even when the stomach is carefully pinned out. It appears likely that the lesions both in "gastrotaxis" and in gastric ulcer arise from the action of the digestive juice upon disintegrated lymphoid patches. Lymphoid tissue is especially abundant in the stomach of the dyspeptic. Neither from the point of view of diagnosis nor, as we shall see, of treatment, is it of importance whether a small lesion involving a vessel is present or whether such a lesion has proceeded to the stage of a round ulcer.

Rest.

In accordance with the teachings of the English physicians of the last century, I believe that the most important point in the treatment of gastric ulcer is to ensure complete and prolonged rest in bed. It has been my lot to treat cases in the out-patient department who would not or could not lie up entirely, and to see patients in better circumstances who have remained up and about against advice. Dietetic and medicinal treatment will relieve such but seldom cure them. On the other hand, I have seen cases in bed treated in many different ways with good results. From these observations the conclusion may be drawn that complete rest is a factor without which all other treatment is likely to be disappointing. I have no doubt that the absolute rest and simple diet enforced after an operation has a great part to play in the relief afforded. If operations for gastric ulcer were arranged at the end of three weeks in bed instead of at the beginning they would, in not a few instances, be postponed indefinitely. I need not dwell longer on the importance of rest, and should have not said so much about it did I not know how many people there are walking about with gastric and duodenal ulcers who could be cured if they went to bed for a month or even a shorter time. The rest in bed should be absolute; no getting out or sitting up, and as little rolling over as possible. The indications for complete rest are still more stringent when there has been a recent haemorrhage; the patient should not move from the supine position for ten days. An ice-bag on the epigastrium helps to keep the patient still; it also diminishes stomach movements and relieves pain.

Dietetic Treatment.

This must be looked at from the point of view of the condition of the stomach, and from that of the general nutrition of the patient.

The stomach contains an unhealed wound, and very often an eroded blood vessel loosely plugged with newly-formed clot. It also produces an acid digestive ferment capable of irritating the ulcer and dissolving the clot; further, the patients who are most liable to gastric ulcer produce this digestive juice abundantly.

We ought not to speak of hyperchlorhydria, if by that is meant a higher proportion of hydrochloric acid in the gastric juice, because it is probable that the percentage of acid in the secretion never rises much above about 0·4, which may be regarded as a normal figure. When pure gastric juice has been obtained from a fistula in man the proportion of hydrochloric acid has been, as in animals, surprisingly constant. That proportion may be depressed in disease, but the evidence is wanting that it can be much raised.

There are, however, three ways in which the total amount of acid, as distinguished from the percentage, in the stomach may be increased. First, by hypersecretion of juice. This was observed by Pawlow to take place in a dog who developed a gastric ulcer in a small accessory stomach made by operation from the normal stomach. During the formation of the ulcer there was a continuous secretion of three or four times the normal amount of juice.

Secondly, by any interference with the natural discharge of the stomach contents. The pylorus has been shown to open as soon as a certain proportion of free acid is present in the stomach; the time which elapses after a meal before the food begins to leave the stomach will, therefore, vary with the nature of the food. Protein will take up a good deal of acid, and its affinities must be satisfied before acid appears free in the mixture of food and secretion, and stimulates the pylorus to open. Carbohydrate, on the contrary, does not take up acid, and therefore, if the meal is chiefly starchy, the acid of the gastric juice is not neutralized and the pylorus opens earlier. We see, then, that if this mechanism is interfered with, as for instance by an ulcer near the pylorus, which may be supposed to render the musculature of the pylorus unduly irritable, the pylorus would not open at the proper time, and instead of the acid juice passing on into the small intestine to be neutralized, it would accumulate in the stomach. It is probable that such interference with the motor functions of the stomach is often responsible for the so-called hyperacidity.

Thirdly, the total amount and percentage of free acid may be raised by the fermentative production of organic acids. In this way the percentage of total free acid, but not, of course, of hydrochloric acid, may be higher than about 0.4; indeed, the total acidity may be equivalent to 0·6 or 0·7 of hydrochloric acid. Fermentation is most likely to occur as a result of deficient motor activity of the stomach.

The dietetic treatment adopted depends upon the view taken of the relative importance of the above-mentioned conditions in the stomach. If the most urgent requirement is to protect the ulcer from all contact with foreign material, whether fluid or semi-solid, then no food at all must be given by the mouth; if, on the other hand, the harm is done by the gastric juice, then means must be used to prevent its secretion or to neutralize its activity after it has been secreted.

If we could be sure that the withholding of food by the mouth would be followed by the cessation of gastric secretion, the course to be taken would be plain; but we do not know this. It is true that the normal stimulus to the secretion is a meal; but the flow begins before food is sent into the stomach, for the thought of food is sufficient to arouse it; and the hungrier the patient the more likely is such a thought or any stimulus to call forth secretion. Further, I have already mentioned that the ulcerated stomach is prone to hypersecretion of juice; and several observers have reported that the administration of a nutrient enema, which is associated by the patient with the idea of food, does excite the production of gastric juice, and one of them has actually observed this in a patient with a gastrostomy wound.

If, then, we cannot be sure that starvation really secures the ulcer from all irritation, we may turn to see what means may be employed to neutralize the gastric juice and to lessen its secretion. When the etiology of the gastric and duodenal ulcer is considered, it is evident that this course is a reasonable one, for these ulcers only arise in those parts of the mucous membrane which are exposed to the action of the gastric juice. Dr. C. Bolton has shown that the ulcers which follow the injection of "gastrotoxic serum" into the peritoneum in guinea-pigs are not formed if the activity of the gastric juice is arrested by neutralization. It is the digestive power of the acid secretion which is the immediate cause of the ulcer, and appears to be the chief factor in preventing it from healing.

The gastric juice may be neutralized, and thus rendered harmless, by giving protein and by giving alkalis. Both these methods are useful, but the former has the advantage that food is being supplied which, when it has been passed on into the intestine, will be absorbed and nourish the patient.

Another plan which may be adopted is that of mechanically draining off the gastric juice and the food from the stomach by means of a gastro-jejunal fistula. This operation is effectual in cases of ulcers at the pyloric end of the stomach, but it is less likely to be so in those at the cardiac end. I have seen recently a case in which a later operation showed that an ulcer in the cardiac part had leaked and become adherent to the abdominal wall after a gastro-jejunostomy had been performed.

The secretion of juice may be lessened or inhibited by giving fat, which, again, is a valuable food; indeed, from one point of view, that of the heat value, the most valuable of the three foodstuffs.

Leaving now the discussion of the local condition in the stomach, let us consider the general nutrition of the body. This is undermined in many cases by a long period of dyspepsia suffered by the patient before an ulcer had formed or was recognized. Some patients are, however, well covered, but these are commonly anaemic, and anaemia has been shown to delay the healing of ulcers in the stomach.[9] There is no danger to life in withholding food altogether for a few days or even two or three weeks in fairly stout people, provided that fluid is supplied freely. In the emaciated, however, such a proceeding cannot fail to be harmful. It is true that food can be given per rectum, and under favourable conditions about half the needs of the body can be supplied in this way. It is seldom, however, that the absorption of this amount of food can be continued for more than a few days. We must remember that only a part of what is introduced into the sigmoid is really absorbed, and, in the average case, only a small part. We cannot, therefore, regard rectal feeding as anything but a temporary makeshift, valuable though it may be in a few individual cases.

The injection of oil under the skin has been practised, but in the only cases that I have found in which its effect has been estimated by a metabolism experiment, it appeared that but little, if any, of it was oxidized,[18] and in one patient unused oil was found lying in the body spaces after death.

Having briefly discussed the chief considerations which have formed a basis for the methods of treatment put forward at the present day, I will proceed to describe a few of these methods which have been used widely. I will not apologize for detailing them at some length, for they are not described in the ordinary textbooks, and my experience is that they are often carried out imperfectly from ignorance of the details. Of course, no method should be followed blindly, and in particular cases modifications must be made when necessary.

Rectal Feeding and Graduated Milk Diet.

The plan which has, until recently, found most favour in this country—at all events, in textbooks and in hospitals—is that of deprivation of food by the mouth, with rectal feeding, followed by a graduated milk diet. The patient is kept in bed, and if haemorrhage is recent nothing whatever is given by the mouth—not water nor ice to suck; the mouth is washed out repeatedly with antiseptic solution, and bismuth lozenges are given to suck. An ice-bag is placed over the stomach. A nutrient enema is given three times a day at intervals of six hours. At the fourth injection time the bowel is well washed out with normal saline solution, and, after an interval of half an hour, then a fresh quantity, up to a pint, of normal saline passed into the bowel and allowed to remain. The enemas should be run in slowly with a soft rubber tube and funnel; if greater pressure be used, such as is produced by a syringe, the fluid is likely to be returned. The hips should be raised so that the fluid injected may run by gravity into the colon. The patient must keep still for some time after each injection. The enema recommended by Boyd and Robertson is as follows: The yolk of two eggs, 1 oz. of pure dextrose, 8 grains of common salt, peptonized milk to 10 oz. There is no difficulty in 9 or 10 oz. being retained if it is run in very slowly and the bowel washed out thoroughly every day. In well-nourished people the nutrient enemas may be dispensed with. Enemas of half a pint of normal saline solution are then given every six hours. An intermediate course is to give 7 or 8 per cent. of dextrose in normal saline. The length of time that enemas should be continued is differently fixed by different physicians; some, after a severe haemorrhage or with a chronic ulcer, continue them for two or three weeks. Probably ten or fourteen days is enough. After five or six days small quantities of milk may be given by the mouth, say 2 or 3 oz. every two hours, increased gradually to 4 or 6 oz. at a feed. Each feed must be taken slowly in sips. If pain is caused, 10 grains of sodium bicarbonate may be given with the milk. After the tenth day a little bread and milk or milk boiled with flour is allowed and the enemas discontinued. Arrowroot, tapioca, sago, and ground rice are now added to the milk with ½ oz. of plasmon. Bread and butter, rusks, eggs, and milk puddings follow. After four weeks, or, according to some physicians, not until the sixth week, pounded fish or boiled calves' brains, or very underdone scraped meat is carefully tried.

The advantage of this method is its exceeding caution. The disadvantages are its neglect of the possibility of the irritation of an ulcer by the gastric juice leading to recurrence of haemorrhage; the slowness with which a sufficient amount of nourishment is obtained; and the risk of parotitis from oral sepsis.

Leube has elaborated a diet on similar lines which has had a great vogue abroad. Patients with recent haemorrhages are treated with abundant nutrient enemas for the first three days, but are sometimes allowed a little iced milk by the mouth. After a few days they begin the diet upon which patients without haemorrhages are placed at once. This diet is designed to give a good deal of nourishment with a minimum of gastric work, and is as follows: For the first ten days small quantities of boiled milk, meat extract, soup, unsweetened biscuits. On the fourth day, for instance, the patient receives two and a half pints of milk, six ounces of rusks and some meat extract. A tumbler of Carlsbad water is taken fasting every day. If all goes well, the patient may get up after ten days. In the next seven days gelatinous soups, rice, and sago cooked with milk, raw and lightly-boiled eggs, boiled calves' brains, and boiled chicken and pigeon, without fat or skin, are added. In the next five days the diet is increased by minced underdone beefsteak, potato soup rice soups, a little tea, and coffee. The fourth diet, from the twenty-second day to the end of the fourth week, contains also tender beef, roast chicken and pigeon, well-cooked venison or partridge, macaroni, and a little white bread. From the fifth week on a return is gradually made to ordinary food. Strauss recommends a similar diet, but gives nothing by the mouth until the faeces have been shown to be free from blood.

Leube's plan is much less exhausting and rigorous than the first described; the patient is taking a concentrated and nourishing diet in a fortnight, and is soon being well fed. The enemas and the graduated milk diet are not carried to an extreme. Leube's régime has been successful in a large number of cases, and the mortality is low. It is open to the same objections as the first plan detailed, though in a less degree. But both the above methods include nutrient or saline enemas, and these are difficult to administer properly unless skilled nursing can be provided. They are also, under all circumstances, strongly objected to by patients and their friends. Indeed, nutrient and saline enemas have never been used in private practice in more than a small proportion of cases. In the majority treatment has consisted of rest in bed on a diet of milk, beginning with small quantities soon after the haemorrhage, if any, has ceased, the amount of milk being increased rapidly in favourable cases. Dr. Saundby in 1891 recommended rectal feeding only for a day or two in cases of haemorrhage. This was followed by 1 oz. of a mixture of equal parts of milk and lime water every hour. Then bread-and-milk and custard were given, and then eggs and pounded chicken, the patient being led to an ordinary nourishing diet as soon as possible. An iron pill was taken daily, and magnesia.

Treatment by Immediate Feeding.

We may now consider the plan recommended by Lenhartz, which has been on trial for a comparatively short time, but long enough (eight years) for a large number of cases to have been treated by it. I first gave it a trial in 1906,[14] and published a series of cases, with a short review of the literature, last year.[15] The following account of the method is taken from that paper:

The routine of the Lenhartz method is as follows: The patient is kept absolutely in bed for four weeks, for the first two of

which she is not allowed to move from the supine position for any reason whatever. All mental excitement must be avoided. An ice-bag is kept upon the stomach almost continually for the first two weeks. The dietary consists of eggs, beaten up with sugar, or in some cases with wine, and iced; and of milk. These two foods are taken in small quantities at frequent intervals from a teaspoon, the quantity prescribed being spread over the day and not given at definite meal times. The first day 7 to 10 oz. of milk are given, and one egg. The quantity is increased daily by 4 oz. of milk and one egg until 2 pints of milk and six eggs, or in some cases eight eggs, are reached. From about the third to the eighth day raw or almost raw mince is added, starting with 1 oz. in divided doses, either beaten up with the egg or alone; the next day, if the mince is well borne, 2 oz. are given. In my own cases minced beef was used.

From the seventh to the eighth day boiled rice is added, followed by softened bread, and, later, by a small quantity of bread-and-butter. One or more eggs may now be lightly boiled. The diet is then gradually increased by the addition of minced or pounded fish with a corresponding reduction of eggs, until by the end of the fourth week the patient is on an ordinary mixed diet containing the common foodstuffs with the exception of indigestible foods—such as peas or other seeds. The patient is instructed to masticate very slowly. On the twenty-eighth day the patient is allowed to get up, and discharged from the sixth to the tenth week.

For the first ten days bismuth subnitrate is given in doses of 30 grains in water without mucilage twice or three times a day. In my cases, however, the carbonate or the oxychloride was used. From the sixth to the tenth day sulphate of iron is prescribed in the following soft pill:

Sulphate of iron	150 grains
Calcined magnesia	20 grains
Glycerine	1 drachm.

Mix and divide into 60 pills.

Two of these are given two or three times a day. Lenhartz increases the dose gradually, giving three for three days, four for four days, up to ten for ten days, and then down again. In some cases arsenic is added. The bowels are not disturbed at all during the first week unless they are naturally opened. An enema is then given, and repeated every fourth day during treatment. The mouth should be washed out and attended to regularly.

In my own cases I have usually begun with 4 oz. of milk and one egg on the first day, and have seldom given the iron pill more than three times a day.

It is claimed for the Lenhartz method that it is suitable for all forms of gastric ulcer except, of course, those associated with mechanical deformities, such as stenosis of the pylorus and those in which some serious complication, such as perforation, peritonitis, or subphrenic abscess, is present. The sour regurgitation, the vomiting, and the pains and distress after food disappear in from a few hours to a few days. The method has been found successful after recurrent haemorrhages have occurred on rectal feeding.

The diet introduces an amount of food which soon becomes adequate to the needs of the body. A table is given by Lenhartz in which the calories given per diem are shown to reach nearly 1,600 on the seventh day and 2,500 on the tenth. The actual figures for the first fourteen days are: 280, 420, 637, 777, 956, 1,135, 1,588, 1,721, 2,138, 2,478, 2,941, 2,941, 3,007, 3,073 calories.

It is important that patients should be kept in hospital some weeks after they have reached full diet, for a case cannot be recorded as cured until not only are there no symptoms, but the percentage of haemoglobin and the weight are normal. Unfortunately, it is difficult to keep the average hospital patient in after all symptoms have subsided.

The ulcer cannot be regarded as healed until the motions have been free from blood for several weeks. If haemorrhage persists in small quantities, the attention should be directed to the possibility of cirrhosis or carcinoma. In cases in which the blood test is being regularly made, the mince must be omitted altogether from the diet.

From a comparison of my own series of cases, with a similar number of cases treated by other methods, it was concluded:

First, that the Lenhartz method of treatment is not more dangerous than treatment by nutrient and saline enemas, followed by a graduated milk diet. In these particular cases the recurrence of haemorrhage was less frequent, and there were no deaths.

Secondly, that the pain suffered by the patient in the course of treatment is less on the Lenhartz diet.

Thirdly, the diet gives far more nourishment than can be introduced into the body by nutrient enemas, and is, therefore, more desirable in patients who have frequently been for a long time in a state of semi-starvation, or have suffered a loss of blood, or both.

Fourthly, that in cases treated by this method rectal injections may be entirely avoided. This is an advantage in a hospital, and a still greater advantage in treating cases at their homes, where rectal injections are not only regarded as extremely unpleasant, but are seldom efficiently administered.

Gerhardt used the Leube and the Lenhartz methods, and obtained good results with each. This is my own experience. The choice may, then, turn upon convenience, and there is no doubt that the latter method is more convenient.

Whenever the Lenhartz method is discussed, the objection is put forward that it does not seem wise to put food into the stomach immediately after a haemorrhage. The fact is that such patients do well, and recurrent haemorrhages are less frequent than in patients treated by other methods. It is extraordinary how some very severe cases have responded to this treatment. Here is an example (from notes by the house-physician, Dr. G. W. H. Carpenter):

M. W., aged 25, a cook, was admitted into St. George's Hospital on August 23rd for gastric ulcer. In the previous two years she had had indigestion several times. On the day before admission she brought up "half a pailful" of bright blood. She was given nothing by the mouth, except a very little water in sips. That evening she vomited 51 oz. of blood; ¼ grain of morphine was injected, and 15 oz. of saline given per rectum, six hourly, one of which contained 10 c.cm. of horse serum. The pulse-rate quickened, and at 10 p.m. was 132. The next evening a third haematemesis of 29 oz. occurred. A little iced milk was allowed, and adrenalin solution administered in 20-drop doses in white of egg. Morphine was again injected, and an ice-bag applied to the epigastrium. For the next two days all went well. A little raw beef juice and horse serum was taken in drachm doses. On the fifth day after the first haemorrhage a clot, representing about 33 oz. of blood, was vomited. Morphine, horse serum, and rectal saline injections were continued. The next day the fifth haemorrhage occurred, about 20 oz.; adrenalin in egg-white was given again. The patient was blanched and the pulse 140. The next afternoon a sixth and a seventh haemorrhage took place, 35 oz. in all. The pulse could sometimes scarcely be felt, and the patient was in an extreme condition. Continuous subcutaneous saline infusion was given. Operation had been discussed, but put on one side on account of its high mortality when performed for haemorrhage.

At 8 p.m. feeding with milk and eggs was begun, one egg in 4 oz. of milk being given in the next twenty-four hours. No more bleeding occurred. The saline infusion was continued two days longer. The patient made an uninterrupted recovery. Six weeks after admission she looked well, had a good colour, and was able to take all her food without discomfort.

The advocates of the treatment by this method go so far as to say that it is a valuable means of diagnosis, for in cases which do not yield to it cancer or cirrhosis may be suspected, or, in cases without bleeding, neurosis. I have seen this verified as regards cancer more than once.

The Lenhartz method seeks to protect the ulcer by neutralizing the acid of the gastric juice with protein, and by inhibiting its secretion by the fat of the yolk of egg and milk. It has long been known that fats inhibit the secretion of gastric juice, and butter, cream, and bacon fat have been given in conditions of hypersecretion; the work of Pawlow's pupils has established their use upon a scientific basis. Senator with fats prescribes gelatine, with a view of arresting bleeding and sparing protein. He claims that his plan has all the advantages of the old and the new methods without their disadvantages. He orders teaspoon doses of 10 per cent. gelatine in water every quarter or half hour, with an ounce of butter, in small frozen pellets, and 9 oz. of cream in the twenty-four hours. This is followed by milk, beaten eggs, and scraped meat.

Others adopt further compromises by withholding food for two or three days, milk and cream being begun on the fourth day. I find that many of my colleagues follow with success this rule, which differs from that recommended by Dr. Saundby in that a larger proportion of fat is given.

Rosenfeld gives half a litre of cream a day for the first three or four days. This, by diminishing the secretion of acid and causing the pylorus to open, has the same effect, he points out, as gastro-enterostomy. Pain is allayed and bleeding arrested.

Oil Treatment.

P. Cohnheim in 1900 introduced the treatment of gastric ulcer by large doses of olive oil. Walko (1902) recommended the oil alone for the first few days in the form of 1 or 2 oz. of olive or almond oil, three or more times a day. I have found this method successful. The great objection

to it is the repugnance which it excites in some patients' and to which I shall refer again under the heading of duodenal ulcer.

In my own experience, very few cases have failed to respond to one or other of the above methods of treatment, if carefully carried out. We read of cases operated upon because medical treatment had failed; this happens of course, but it need not happen often. Any form of milk diet is regarded by some surgeons as efficient medical treatment, whether it was applied strictly with due attention to absolute rest, and to the quantities taken, or not. The fact is, just as much care and attention both to principles and to details should be given to the medical treatment of a gastric ulcer as are necessary to the performance of an aseptic operation. It is not enough to say, Rest as much as you can, and feed upon slops.

The Arrest of Haemorrhage.

The most important measure is absolute repose. Surgical aid during haemorrhage is not to be recommended, the mortality being greater than when no operation is done. Bleeding from the stomach is seldom immediately fatal; the patient may, however, die in a few days from exhaustion. An ice-bag is placed upon the stomach to cause contraction of the stomach wall; it also keeps the patient still, since any movement tends to dislodge the bag. Morphine is given subcutaneously in doses of ¼ grain; atropine is also recommended. Many styptics have been used; the most valuable is adrenalin, in doses of 30 drops of a 1 in 1,000 solution. I have given this in a little egg-white, with the view of the protein taking up any gastric juice that may be present. No styptic can be expected to arrest haemorrhage from a large vessel. The bleeding goes on until the fall of pressure in the arteries allows a clot to form; the aim of treatment must then be to ensure that the clot is not dislodged by the rise of pressure caused by movement, or by direct movement of the stomach, or from digestion of the clot by gastric juice. Horse serum is also given. Some physicians have used large doses of bismuth in haemorrhage.

After-Treatment.

The after-treatment of cases of gastric and of duodenal ulcer is of great importance, owing to the tendency to recurrence. The teeth of the patient must be kept in order and the food well masticated. Alcohol is best avoided; if taken at all it must be in a very weak solution. Sternberg has shown that concentrated alcohol promotes the formation of ulcers in animals. No vinegar should be allowed. Dr. C. Bolton found that 0 5 per cent. acetic acid favoured the extension of "gastro-toxic" ulcers of the stomach; vinegar is a solution of eight times that strength. Strong spices, peppers, and irritants of all kinds must be prohibited. Foods containing small indigestible particles, such as seeds and stringy fibres, should be avoided. The patient must not take aërated waters, which are likely to distend the stomach unduly. If tea is taken, it should be China tea, very weak, and only once a day. All bland and non-irritating foods may be recommended, and especially cream and butter, gelatinous soups, and soft, well-chewed fish, meats, and farinaceous foods.

Indications for Operation.

What are the indications for operation? Perforation, of course, pyloric stenosis, or other mechanical deformities. If the symptoms, and especially severe pains, do not yield to treatment, and recur more than two or three times, I advise gastro-enterostomy, particularly if there is reason to suspect a chronic ulcer at the pyloric part of the stomach. The operation gives relief just as does appropriate medical treatment, and the relief is often persistent. The symptoms may, however, recur after operation, as they may after other treatment. I have seen a number of such cases—indeed, considering that only a small proportion of cases are operated upon, a striking number. It must be remembered, however, that as I do not recommend operation until medical treatment has been followed by recurrence, only the more resistant of my own cases have been passed on to the surgeon. If every case diagnosed as gastric or duodenal ulcer is operated upon without delay, as is the practice of some surgeons, no doubt much more uniform success may be obtained, though a great many unnecessary operations will be, and indeed are, done.

It appears that a gastro enterostomy is not likely to be so efficacious for a cardiac as for a pyloric ulcer, since it cannot prevent food and gastric juice from passing over the cardiac part of the stomach. In such cases it is advisable that the ulcer be tucked in at the operation whether a gastro-jejunostomy be done or not. Clairmont in Vienna, at v. Eiselsberg's clinic, noted in a large series of cases that the nearer the ulcer was to the pylorus the more favourable was the effect of gastro-enterostomy.

My own experience is that the cases which are refractory to careful medical treatment are sometimes the same to surgical treatment. It is well, therefore, not to promise the patient too much. In Clairmont's series 52 per cent. were cured and 15 improved, leaving 33 per cent. of less satisfactory results.

A certain number of cases have a palpable tumour in the epigastrium. These masses are not necessarily carcinomatous, but nevertheless an operation should always be done to ascertain whether they are or not. Here is such a case:

A woman of 35, a patient of Dr. Atkinson, of Catford, suffered for months from gastric symptoms in spite of treatment. A mass formed in the epigastrium. Mr. English opened the abdomen at my request, and found a large bossed tumour at the pyloric end of the stomach. A gastro-jejunostomy was done and a piece of the mass removed for microscopical examination. It proved to be inflammatory. That is eighteen months ago, and the last report is that the mass is much smaller, and the patient enjoys good health and can walk for miles.

Such cases may recover without operation, as did a patient whom I saw three years ago:

An elderly gentleman had a hard tumour in the upper abdomen associated with gastric symptoms. Two or three medical men had made a diagnosis of carcinoma, and in view of his extreme emaciation and anaemia and the extent of the tumour, I could not dissent from that view, and did not advise an operation, but contented myself with instructions as to a non-irritating and nourishing diet, with large doses of bismuth. The patient, to the surprise and gratification of all, made a good recovery and is well now.

It is important to take out a piece of the growth, and not only a gland. I have known an enlarged gland reported benign whilst the mass was a carcinoma. In another case, a male, presenting almost the same symptoms as the young woman referred to above, the piece of growth taken out was malignant. A second operation was then performed by Mr. English, who excised the major part of the stomach, sewing up the duodenum. The patient recovered, grew fat, and was well a year later. Shortly after this, however, he put an end to his life. His medical man, Dr. Mayston of Erith, reported that he had had severe headaches, and these may have been due to a recurrence in the cranial cavity.

Treatment of Duodenal Ulcer.

We owe a great deal to the Mayos in America and to Mr. Moynihan in this country for their enterprise in opening the abdomen in patients suffering from this complaint, and thereby enabling us to diagnose the disease with much more accuracy than formerly. The patients who have been thus operated upon should also receive the gratitude of the profession for their contribution to an important new chapter in experimental medicine. Provided that the patient is willing to submit to proper medical treatment and to rest in bed, duodenal ulcer is, in the large majority of cases, easily curable. Many mild cases may be cured by giving bicarbonate of soda in 20-grain doses when the pain comes on, and prescribing a bland fatty diet. Here is an example:

R. R., male, aged 45, ill for two months, sought advice on April 23rd, 1909, for bad pain occurring three to four hours after a meal, relieved by food. Two years before he had vomited some blood. The bowels were only opened every second or third day. A week later black motions were passed. On May 7th he was better. The motion contained no blood either to the eye or to chemical tests. On May 18th there remained a slight pain only before meals. On June 11th he reported that he had had no pain for a fortnight and felt well. I have just heard from him, after nine months, and he has had no return of the complaint. This patient was treated simply by a diet containing abundance of milk, eggs, butter, dripping, with milk and eggs alone for the first few days. A mixture containing 20 grains of sodium bicarbonate was ordered to be taken when the pain came on. He rested in bed only for the first few days.

As a rule, however, the patient should be entirely in bed and should be treated like a gastric ulcer. Duodenal ulcers are of the same nature as gastric ulcers, in that they occur in that part of the alimentary tract which is exposed to the gastric juice before its acid is neutralized by the bile and pancreatic juice. Cases of duodenal ulcer do well on the Lenhartz diet; did time permit I could quote a considerable number. I often combine with it ½ oz. of olive or almond oil three times a day, following the method introduced by Cohnheim and by Walko, and advocated by Dr. Hertz. On this plan ½ oz. of oil is given every three hours and increased to 1 oz. or 2 oz. Nothing else is given, except water for thirst, until there is no blood in the stools. Cream is then given, and the foods of the Lenhartz diet are added gradually, but not the rice. The oil is now reduced to 1 oz. before each meal.

I have tried this method thoroughly, and can recommend it for patients who will endure it, and not a few will. To others it is exceedingly nasty, and fails on that account. Whenever retching or vomiting is caused the treatment should be altered. If the patient does not respond to one or other form of dietetic treatment, the possibility of the symptoms being due to gall stones must be carefully reconsidered.

The indications for operation in duodenal ulcer are the same as in gastric ulcer. It is to be noted that a proportion of cases of ruptured duodenal ulcer have had no premonitory symptoms. As in gastric ulcer, a certain number of cases relapse after operation—25 per cent. in 28 cases operated on by Drummond and Rutherford Morison and 15 per cent. in the series recently published by Mr. Moynihan, which includes many cases that cannot be regarded as severe. If those surgeons who advocate surgical treatment as a routine could do a year or two's work on the medical side of a hospital, they would learn that many cases get well as out-patients, and most of the remainder as in-patients, with rest and dietetic treatment.

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DOES GASTROSTAXIS EXIST AS AN INDEPENDENT DISEASE?

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IT is well known that profuse haemorrhage may occur from the mucous membrane of the stomach apart from gastric ulceration. For example, in severe anaemias, in infective disease, in purpuric conditions, and in toxaemias associated with diseases of the liver and kidneys, it is a common experience to find the mucous membrane of the stomach intact when vomiting of blood has occurred during life.

In the condition known as gastrostaxis, however, there is said to be an oozing of blood from the mucous membrane of the stomach not only in the absence of any ulceration of that organ, but also in the absence of any other disease in which bleeding is likely to occur. Gastrostaxis is also said to possess a definite clinical history simulating that of gastric ulcer—namely, pain, vomiting, and haematemesis occurring in attacks in either sex, but especially in young females. It seems to me that the actual existence of gastrostaxis as a common clinical entity is hardly established on a sufficiently sound basis, and that it is extremely important for the question to be definitely decided one way or the other, because it is obviously absurd to treat a case of gastrostaxis by operation, whereas in the haemorrhage of gastric ulcer life may often be saved by timely operative interference.

For some time my attention has been particularly directed to the difficulties in the way of proving that this disease exists, and my object in writing this paper is to emphasize these difficulties and to encourage others to pay especial attention to the condition of the stomach at all *post-mortem* examinations of patients who have died of haematemesis. I am continually on the look-out for cases of gastrostaxis, but have never yet encountered such a condition on the *post-mortem* table, in all cases having found one or more acute gastric ulcers.

The evidence that gastrostaxis exists is threefold, namely: (1) That at certain *post-mortem* examinations of patients who have died of haematemesis no lesion has been found in the stomach to account for the bleeding. (2) That at certain operations performed upon such patients an ulcer has not been found. (3) That gastrostaxis possesses a definite clinical history. I shall critically examine each of these statements in turn.

Haemorrhage from the mucous membrane of the stomach is due to one of two pathological conditions:

1. There is some lesion of the walls of the blood vessels, allowing of the escape of blood, which breaks through the surface of the mucous membrane into the cavity of the stomach. There are two distinct conditions of the mucous membrane produced:

(*a*) If the haemorrhage be profuse enough to kill the patient it is quite common to find at the autopsy multiple erosions of the mucous membrane. These erosions are quite superficial, the bases of the glands being preserved, and form slight depressions in the surface of the mucous membrane as if the latter had been lightly rubbed off with the finger. When the stomach is hardened in formalin they can hardly be seen by the naked eye unless there be any altered blood adherent to them, but they are easily recognized microscopically. These erosions are of no importance, except that they may help to keep up the bleeding, and they do not develop into ulcers because the stomachs of such patients are kept in the resting condition, the secretion of gastric juice being therefore at a minimum, and secondly, the gastric cells themselves are healthy, and there is no tendency towards their further digestion by the gastric juice.

(*b*) If the haemorrhage be not profuse the condition found after death, which is always due to the primary disease, is one of multiple small or large interstitial haemorrhages into the mucous membrane, with perhaps a little coffee-ground material in the cavity of the stomach. Such interstitial haemorrhages appear as black patches on the inner surface of the stomach, which on microscopic examination are seen to be portions of mucous membrane infiltrated with blood which has not escaped externally. These haemorrhages cause no symptoms, and the patient is fed in the usual way, with the result that the stomach is actively digesting, and the infiltrated patch of mucous membrane is digested owing to the destruction of the gastric glands, and removed, leaving an ulcer. These two pathological conditions occur quite independently, and constitute two distinct types; but there is no doubt that at the same time one may see all transitions and combinations in different cases.

2. The haemorrhage is a secondary event resulting from ulceration of the mucous membrane. The ulcer is the primary condition and the haemorrhage due to a secondary opening up of a blood vessel. There is a great deal of confusion with regard to the conception of what is an erosion and what is an ulcer, and the two names are sometimes applied to precisely the same condition.

Both the terms "ulcer" and "erosion" imply a loss of substance, and when the lesion is once formed, there can hardly be a clear distinction between them, the difference being only one of depth. From the point of view of morbid anatomy, therefore, an erosion may be regarded as a superficial ulcer.

From the point of view of general pathology, we are not yet in a position to formulate precise definitions of these

two conditions. I think it will be granted by all that serious haemorrhage will not occur as the result of an erosion, so that if a patient die from gastric haemorrhage any lesions which may be subsequently found in the mucous membrane, and which are microscopically proved to be erosions, must be a result of the haemorrhage, which is therefore the primary condition. The lesion must be examined microscopically, because, as I shall show later, fatal haemorrhage may occur from an ulcer which is so shallow as to be indistinguishable from an erosion by the naked eye. To whatever pathological condition the term "erosion" be restricted is immaterial, because it is quite obvious that if a small artery be opened up and death result from profuse haematemesis, the lesion extends to the submucous tissue or deeper, and should undoubtedly be called an acute ulcer. This is the class of case with which I am dealing in this paper. It is often stated by writers that a slight abrasion or erosion existed, in the centre of which a blood vessel had been opened. Such a lesion is undoubtedly an ulcer, and a great deal of misconception arises from the use of these ambiguous phrases.

When moderately stretched out at an autopsy the thickness of the stomach wall is about 4 mm., the mucous membrane being about 1 mm., so that an ulcer reaching to the muscular coat must necessarily look shallow and especially so in proportion as its area is large. This shallow appearance almost forces the observer to call the lesion an abrasion or erosion and to consider it as of little moment. I do not forget that much of the congestion of an acute ulcer probably disappears after death.

Acute ulcers vary in diameter from about the size of a split pea to an inch. Small acute ulcers and the scars of acute ulcers are very easily overlooked at *post-mortem* examinations, and an ulcer may be cut through in opening the stomach, and so obliterated. All writers agree upon this point, and I think there is no doubt that many stomachs have been described as being free from any evidence of ulcer owing to the employment of a not sufficiently minute method of examination. For such an investigation the stomach should be placed in warm water so as to relax the muscular coats, and first examined in front of a light for opacities in the mucous membrane. It should then be pinned out on a board after being moderately stretched, and the surface should be well washed with a camel-hair brush, and carefully examined all over by means of a lens. Even now a scar may be missed. The specimen should then be hardened for twenty-four hours in 5 per cent. formalin, and dried by washing in methylated spirit. Stellate scars can be much easier seen in the dry state, and if the specimen be photographed they are seen with greater ease still. The radiating lines are exaggerated by the photographic plate.

Hardening in formalin, of course, takes the colour out of the specimen; but I am presuming that the specimen has already been examined in the fresh state and all information possible gained from the presence of blood. The scars of acute ulcers are not always stellate in form. The only evidence of a scar may be a slight opacity of the mucous membrane which is adherent to the muscular coat at that spot.

If the ulcer has perforated the muscular coat and been at all extensive, the resulting scar will be a small surface very slightly depressed below the surrounding mucous membrane, but otherwise looking quite like it. The surrounding mucous membrane may be slightly puckered or not. The scar is always very much smaller than the ulcer from which it has resulted, and it often tends to be oblong, or like a small fissure, and may be quite invisible till the stomach is stretched. The area of such a scar may be less than a fifth of that of the ulcer preceding it, as I have been able to show experimentally.

A point of the greatest importance is that in the centre of a scar of this kind, almost invisible itself, may be found a tiny opening leading into an artery. One such case was only recognized by a piece of blood clot which protruded from the hole; this clot had been tunnelled by the blood, and formed a tiny projection from the scar. It is not sufficiently widely known that profuse haemorrhage may occur from an ulcer which is almost healed.

The following three cases illustrate the fact that death from profuse haemorrhage may occur at any stage in the evolution or cicatrization of an acute ulcer.

CASE I.—*Haemorrhage from an Acute Ulcer in Its Fully Developed Stage.*

The patient was a servant, aged 30 years, who was admitted to University College Hospital on February 19th, 1908. She had no previous history of any stomach disease or indigestion. On the morning of the day of her admission she suddenly vomited half a pint of blood, and had five such attacks during the day. She was blanched and had a small feeble pulse of 120 in frequency, but was well nourished and apparently otherwise healthy. During the next two days she had three attacks of haematemesis, melaena occurring. The vomiting stopped, but the patient died on the sixth day of her illness. At the *post-mortem* examination an acute ulcer was found on the posterior wall of the stomach, situated 1½ in. to the right of the cardiac orifice and 1 in. below the lesser curvature. It was sharply punched out and extended to the muscular coat of the stomach. It was round in shape, ¾ in. in diameter, and looked quite shallow. In the centre of the base was an opening into a small artery.

CASE II.—*Haemorrhage from an Acute Ulcer Advanced in Healing.*

The patient was a man, aged 49 years, who felt a sudden pain in the abdomen whilst at work on September 3rd of last year. The pain was followed by faintness and the patient vomited up two quarts of blood, according to his own statement. He had epigastric pain after food, which he still continued to take, the pain coming on either at once or two or three hours after ingestion, and he had melaena. Five days later he vomited up a pint of blood, and on the sixth day was admitted to University College Hospital. It was found that seven years previously he had been in the hospital. The notes of the case showed that he then had pain three-quarters of an hour after food in the epigastrium, but no haematemesis. The vomiting often relieved the pain, but not always. This attack of pain and vomiting lasted seven weeks, and the patient recovered.

During the seven intervening years he never had any pain or vomiting until the present illness, but he had what he described as a little indigestion on and off. From the third day after admission he was treated by immediate feeding as recommended by Lenhartz. He did well for two days and then suddenly vomited up 24 oz. of blood and died six days later, on the eighteenth day of the disease, after gastro-enterostomy had been performed. At the *post-mortem* examination an acute ulcer was found on the small curvature of the stomach at a distance of 2½ in. from the pylorus. It was irregularly circular in outline and 5 mm. in diameter. It was rapidly healing, the base was smooth and almost level with the surrounding mucous membrane, which showed puckering, and the edges of the ulcer were smooth and showed fine lines radiating on to the surface of the ulcer. In the centre was an open vessel which had bled. Near this ulcer was a stellate scar resulting from a healed acute ulcer of an earlier date. A tiny acute duodenal ulcer which was granulating was also present.

This case also illustrates, what is a well-known fact, that acute ulcers tend to recur in the same individual.

Such acute ulcers normally heal in a few weeks, exactly as they do in animal experiments. They may produce no symptoms; pain and vomiting without haematemesis may occur, or pain and vomiting with haematemesis. Sudden haematemesis or perforation without preceding symptoms constitute well-known clinical types of this disease.

CASE III.—*Haemorrhage from an Acute Ulcer almost Healed.*

The patient was a female, aged 69 years, who, after climbing up seventy stairs, was suddenly seized with nausea, and vomited up about an eggcupful of blood. On the following day (February 1st, 1910) she vomited a pint of blood, and was brought to University College Hospital. A fortnight before admission she had had a "bilious attack," and since then had pain in the stomach. Last August she had a similar attack without haematemesis. With the exception of these two attacks, separated by an interval of five months, she had no stomach disease at all. She vomited blood several times, and had melaena for the first five days, after which mouth feeding was commenced. She did well for four days. On the next day bleeding again commenced, and the patient died on the eighteenth day of the illness. At the autopsy four cicatrized acute ulcers were found on the small curvature of the stomach. Two of the cicatrices were stellate, and two were round, and in the centre of one of the latter was a tiny hole leading into a small vessel.

This case illustrates the occurrence of haemorrhage from an ulcer which is healed except for a small hole in the centre leading into the bleeding vessel. An interesting point about the case is that only two of the scars were found at the autopsy, the two remaining ones being found on the following day after drying the stomach as described above.

Before excluding acute gastric ulcer as the cause of haematemesis one ought, therefore, to exercise the greatest care, and be fully acquainted with all the conditions which are to be looked out for. Such cases as those I have quoted above are common enough, and all observers agree that they may be overlooked at the

autopsy with the greatest ease. The lesions are often called abrasions or erosions because they look so shallow, which is not surprising considering that the thickness of the mucous membrane of the stomach is only about 1 mm., and the base may be almost filled up, as these ulcers are often advanced in healing. The older physicians taught that bleeding might occur from the stomach in the absence of any ulcer, and many such cases were called "vicarious menstruation." Within recent times, however, Hale White[1] was only able to collect 10 cases from the literature, in which it was stated that no *post-mortem* lesion was found to account for the preceding haematemesis; one of these cases was under the care of Dr. Hale White himself, who was unable to find any evidence whatever of ulcer, erosion, or bleeding point at the autopsy. This is in striking contrast with the large number of cases of haemorrhage due to acute ulcer which have been recorded, and which are so well known as not to need reference.

Turning to another aspect of the question, a second piece of evidence quoted in favour of the occurrence of gastrostaxis is the fact that several cases of haematemesis have been recorded in which the patients have been operated upon, the interior of the stomach examined during life, and no ulcer found. These cases fall into three groups: (1) Those in which no lesion whatever was found. (2) Those in which a single bleeding point was found. (3) Those in which multiple bleeding points were found. The first group contains the greatest number of cases.

From what I have said above, it will be at once evident that it is quite impossible to explore the interior of the stomach during life thoroughly enough to exclude the presence of an acute gastric ulcer or a scar left by such an ulcer.

Cases are recorded in which the stomach was found normal at operation and yet an ulcer discovered at the subsequent autopsy (Dieulafoy,[2] Stevens[3]).

The inability to find the lesion at an operation is therefore no evidence that an acute ulcer is not present.

If a bleeding point be found in the mucous membrane of the stomach at an operation, it appears to me very questionable whether the exact condition of such a lesion can be accurately made out, and therefore whether the operator is justified in calling it a mere erosion.

The ease with which the point can be examined at an operation depends upon its position, but still, considering the difficulty that is experienced in deciding upon the nature of the lesion by naked-eye appearances at an autopsy, it seems to me that such difficulty must be greater at an operation, whatever the position of the lesion, and that the depth could certainly not be judged to a fraction of a millimetre. Such an operation must be done hurriedly, owing to the condition of the patient, and the bleeding must tend to obscure the character of the lesion.

My experience of operations on the human subject is, however, only that of a spectator, so that I cannot do better than quote the words of a surgeon[4] who has had considerable experience in such operations. After stating his opinion that the bleeding from an acute gastric ulcer is nearly always arterial in origin when it is severe, he goes on to say:

> During life the ordinary acute ulcer of the stomach usually takes the appearance of a linear or triradiate fissure, out of which the blood trickles in a steady, continuous stream. . . . *Post mortem*, when all the congestion and oedema have gone, the arteries, especially in a patient who has died from loss of blood, contract to such an extent that they appear to be quite insignificant in point of size, and a lateral opening, such as is usually present, is almost certain to be overlooked. Unless the blood vessels of the stomach are injected, or some special examination is made, the bleeding point is scarcely ever found in an acute ulcer, and the loss of blood is almost certain to be laid to the credit of the capillaries.

When the bleeding is slight, it comes from the capillaries or veins in the base of the ulcer. If such an ulcer be bleeding, it must be easier to find it in the living person than at an autopsy, but it must be more difficult to examine accurately. If any doubt exist with regard to the nature of a lesion after death, the question can be settled by microscopic examination. The statement, therefore, that a bleeding point is found at an operation certainly appears to me to be no more in favour of the case being one of gastrostaxis than of such a lesion being an acute ulcer. Neither is the finding of multiple bleeding points any evidence against acute ulcer, because acute ulcers are often multiple, and one would expect that in such cases an artery might be opened in one, and that in some the bleeding would be chiefly capillary and in others venous. A case is recorded in which twenty acute ulcers were found at an autopsy.[5]

Another piece of evidence given in favour of gastrostaxis being a clinical entity is that it possesses a definite clinical history. Thus, there are said to be three symptoms—pain, vomiting, and bleeding. These symptoms occur in attacks separated by intervals of months or years of freedom from any symptoms, or at most symptoms of indigestion may occur. These attacks may occur over many years. The first sign of the disease may be profuse haematemesis. The blood is bright red, and varies greatly in amount. In each attack blood is vomited on occasions separated by a few hours or days. The disease occurs in patients chiefly between the ages of 20 and 40 years, and affects females more than males. Vomiting and pain may occur without haematemesis.

I have not the slightest doubt in my own mind that a disease of this type exists, and also that it is commonly not chronic gastric ulcer, but in every case of this sort which I have seen, and which has died, I have invariably found an acute gastric ulcer which has perforated a blood vessel. From the writings of other observers it is evident that they recognize these recurrent attacks as being due to acute ulcers, but I do not think that sufficient stress is laid upon the recurrences in descriptions of acute gastric ulcer in the textbooks.

In three cases within the last six months I have found the scars of old attacks, together with recent ulcers, which have caused death. There is no doubt that acute ulcers in the human subject heal in a few weeks, precisely as they do in animals, and that they are liable to recur in the same person. Each attack represents a new ulcer or ulcers, it lasts a few weeks at most, and the ulcers heal as in animals. I have been able to show that acute ulcers in animals may be delayed in their healing owing to motor insufficiency of the stomach leading to delayed emptying of that organ. In the same way an acute ulcer in man may be delayed in healing, as the following case shows:

> A man, aged 34 years, was admitted to University College Hospital on August 28th of last year. The present illness had commenced about five weeks before admission with pain in the right side below the ribs. The pain was of an aching character and was said not to be related to food. He had a little vomiting, and on one occasion brought up a small quantity of blood, melaena occurring subsequently. He kept at his occupation, and one day whilst at work fainted, and shortly afterwards vomited a dark red clot of blood about the size of the fist. He had never had any indigestion nor gastric pain before the present illness.
>
> Three days later he had two fainting attacks with melaena, and vomiting of blood on one occasion. He died five days subsequently, after gastro-enterostomy had been performed and after an illness of about seven weeks.
>
> At the *post-mortem* examination the stomach was found to be dilated. An acute ulcer was present on the lesser curvature midway between the cardiac and pyloric orifices. It was oval in shape, measuring 8 mm. in its longest and 3 mm. in its smallest diameter. The edges were rounded, quite clean, and slightly incurved. The base was clean, and in the centre was a small eroded vessel which had caused the bleeding. A certain amount of thickening of the base had taken place, and puckering of the mucous membrane at the edges was distinctly visible. The ulcer was healing, but more slowly than normal and with more thickening. In short, the healing was delayed.

The ulcer, judging from the history, was probably at least seven weeks old. When an acute ulcer is delayed in the healing the epithelium grows over the surface more slowly than normal, and the glands are not so well regenerated. There is more dense fibrous tissue in the base than normally occurs, and more scarring results. It has been known for some time that acute ulcers following burns may only give rise to symptoms some weeks after the burns have healed, and unhealed ulcers have been found as long as two and a half months or more after this time. Such ulcers are undoubtedly acute ulcers produced at the time of the burn which have been delayed in their healing, or in which the healing has been completely stopped. It is quite likely that they have been slowly extending, because perforation or sudden haemorrhage may occur as the first symptom. The importance of acute gastric ulcer, therefore, does not merely lie in the fact that it produces a definite group of symptoms during its

formation and healing, but also that it may be delayed in its healing, or extend, and so form the initial stage of chronic gastric ulcer.

The natural conclusions to which one is driven from a consideration of the above points are that gastrostaxis as an independent disease is not yet indisputably proved to exist; and, on the other hand, that acute gastric ulcer is a most important and very common malady, and one which is worthy of more consideration than appears to be given to it.

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ON IMPLANTATION OF THE URETERS INTO THE RECTUM BY THE SACRAL ROUTE.

Illustrated by a Case of Inveterate Vesico-vaginal Fistula in which the Left Ureter was Implanted and the Right Kidney Removed.

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Some years ago the question of implanting the ureters into the rectum by the sacral route was suggested to me by the desire to alleviate the discomforts of a man from whom I had removed the penis with the whole urethra up to the bladder for a carcinoma of the bulbous and membranous portions which had extended to the apex of the prostate. At that time I did not work out the idea to a satisfactory conclusion, as the patient learnt to manage himself, and preferred his condition, with its attendant difficulties, to submitting to an operation with all its uncertainties. But I learnt sufficient to be sure that, in the male at any rate, the operation would be very difficult owing to the depth at which the ureters had to be sought and the contracted area in which the manipulations had to be performed.

When, however, the case which is described in detail below was sent to me by Dr. McAllister, Vice-Master of the Coombe Lying-in Hospital, the suitability of such an operation was so evident that I returned to the attempt to arrange a feasible procedure, with the impression that the greater width of the female pelvis would make it more easy of accomplishment.

Three points suggested themselves for consideration:

The first was the preservation of the sphincteric control of the rectum, for, if the result of the operation was to produce paralysis or even paresis of the sphincteric apparatus, the patient would not be benefited, and might even be made worse.[1]

Then there was the question of the uterus. Could the operation be carried out without its removal, or must it be sacrificed?

And, lastly, there was need for clearer knowledge about the ureters. Could they be easily found in this situation? After their separation would it be possible to close the openings made in the bladder?

1. *The Preservation of the Sphincteric Control of the Rectum.*

The direction usually given in Kraske's operation for removal of the rectum that the section through the sacrum must not extend as high as the fourth sacral foramina, so that the fourth sacral nerves may not be injured, defined the limit of the removal of bone.

The fourth sacral nerves incline upwards after their exit from the foramina, and groove slightly the anterior surface of the sacrum on which they lie. In a horizontal section, if the foramina are left intact, there is no danger of these nerves being injured. The nerves to the levatores ani run from the lower part of the sacral plexus just below the white line, and close to the ischial spine; they are completely out of the way if the knife be kept close to the bone in separating the soft parts from the coccyx and lowest part of the sacrum. The inferior haemorrhoidal nerves which supply the external sphincter, and lie almost entirely within the ischio rectal fossae, are not likely to be disturbed, and the pudic nerves, of which they are branches, are quite safe.

The internal sphincter is probably innervated by the sympathetic, which reaches the bowel along the superior, middle, and inferior haemorrhoidal arteries. With reasonable care no serious damage to the nerve supply of this muscle was to be expected. Consequently there was no reason to suppose that the patient's power of control over the sphincters would be impaired.

2. *The Question of the Removal of the Uterus.*

The uterus and upper part of the vagina lay in the direct route to the trigone, and to expose the insertions of the ureters it was almost certain that the former would have to be excised. If this were done the operation would be partly intraperitoneal.

Its removal need cause no feeling of compunction, for the patient had suffered too much in consequence of her last pregnancy to desire another, and if left it was only likely to be a discomfort and an inconvenience.

My first attempt led me to think that the ureters could be dissected out and removed from the bladder without any further interference with the uterus than the division of the uterine arteries, and without opening the peritoneum. I was able to isolate both ureters and by traction to pull up a cone of bladder on either side of the vagina. The closure of the separate openings made in the bladder was commenced before each ureter was completely cut adrift, so that there was no fear of the bladder wound sinking out of sight.

But subsequent attempts showed me that I had met at first with an exceptionally easy case, and that the removal of the uterus in nearly every instance would be essential. In doing this, after the uterus had been freed on either side from the broad ligaments, it was drawn out of the wound and pulled downwards and backwards, whilst the anterior surface of the vagina was stripped off the base of the bladder. The tendency was not to strip the vagina sufficiently low, as, owing to the necessity of preserving the levator ani insertions into the bowel, this was not easy. But a suitable retractor fixed at the inferior angle of the wound gave great help. When the vagina had been separated low enough it was divided transversely, but a sufficient margin was left to permit of its easy closure by sutures.

3 *Exposure and Separation of the Ureters.*

This was not such a simple matter as I had expected. When the uterus was removed and the vagina stripped down, the ureters were not once exposed, nor were they readily found. At this stage there was to be seen an opening into the peritoneal cavity corresponding to the lowest portion of the pouch of Douglas, through which the uterus had been drawn out, and a quantity of fatty pelvic connective tissue. The position of a ureter was best ascertained by the sense of touch. When tissue which concealed it was grasped between the finger and thumb, it could usually be felt as a somewhat flattened but definite cord. By placing a finger in the peritoneum and grasping the tissues on either side of the opening between the finger and thumb the ureters could usually be detected lying close to the peritoneum, but at some depth in the fat. When located they could easily be exposed with dissecting scissors and separated down to their entry into the bladder wall. At first the tendency was to search for them too far to the sides of the wound, but they were usually found running longitudinally ½ in. to ¾ in. from the median line, and tending slightly outwards and upwards to lie on the outer sides of Douglas's pouch. One point that the preliminary observations taught me was to be prepared for ureters of variable size; in one instance the ureters were so small and narrow that even after they had been traced to the bladder some uncertainty still remained until it was found that a probe passed along them from the vesical apertures, which were very difficult to enter. Another was that the separation of the ureters from the bladder required considerable circumspection. Twice at least when I thought I was cutting well wide of the ureter I found that I had divided it in its oblique course through the vesical wall, and had failed to secure its orifice on the mucous membrane. This accident was probably due to putting the ureter on the stretch to steady and define the bladder. A cone of bladder was in this way formed, and the exact situation of the ureter in it no doubt misconceived.

Case of Inveterate Vesico-vaginal Fistula Treated by Implantation of the Left Ureter into the Rectum, and Removal of the Right Kidney.

The case on whose behalf the foregoing investigations were made was that of Mary F., aged 42, who was admitted to the Leeds General Infirmary on February 4th, 1909. She stated that five years ago she had been confined and that forceps were used, the child being stillborn, and that since then she had submitted to thirteen operations. Dr. McAllister wrote that the bladder and vagina had been converted into a single compartment as the result of her first confinement in the country, and that many attempts had been made both in England and Dublin to restore the bladder, without much success.

In the last operation the difficulty was to get the stitches to hold or the tissues to unite when brought into place, even after weeks of preliminary preparation. "The condition of the patient was the deplorable condition of such cases—bad enough in hospital, but unbearable at home, when no one will go near her." When the proposal of transplanting the ureters was suggested to her "the wretched woman simply jumped at the idea of any procedure, no matter how risky, which would offer prospect of improvement, even if short of actual cure."

Her condition on admission was described by the dresser as follows: "The vulva, the buttocks, and the thighs are always wet and the skin is inflamed and eczematous in consequence, and covered with a pustular eruption—more particularly over the buttocks. She gives off an offensive urinous odour, and this, with the pain and discomfort of her condition, makes her very depressed. If she gets up she cannot sit down without pain, and she is only kept fairly comfortable when in bed and receiving careful attention."

On examination it was seen that the perineum was deficient, but the parts were so tender that they could only be satisfactorily investigated under anaesthesia. Then the following condition was found: There was a patent aperture corresponding to the urethra which admitted the index figure. It was only covered with healthy mucous membrane on its upper margin, the rest of the circumference being formed of scar tissue. The floor of the urethra had completely disappeared. On the right side was another aperture leading into the bladder. It was as big as a sixpence, and admitted a finger. It was bounded on one side by the pubic ramus, to which it was firmly attached. The tissue completing the circumference of the fistula and separating it from the urethral opening was very tough, indurated, and fibrous. The uterus was movable backwards and forwards, but was tethered low down in the pelvis, near the cervix, by indurated tissue on the right side. There was an offensive purulent vaginal discharge.

Some time was taken up in preliminary treatment of the vaginal discharge and the unhealthy skin condition, and on March 16th the following operation was performed:

Operation.

After the patient was anaesthetized (ether) and placed lying upon her face with the thighs hanging down over the end of the table, the anal sphincter was well dilated, and the rectum copiously irrigated until it was quite clean. The vagina and the bladder were also thoroughly douched. A median incision down to the bone was then made from the top of the sacrum to one inch from the anus, and the soft parts were dissected off the bone, and sacro-sciatic ligaments for a sufficient distance on either side. Next the coccyx was removed, and three-quarters of an inch sawn off the end of the sacrum. The first difficulty was now encountered. The recto-vesical fascia was only in places capable of separation from the rectum. There seemed to be no perirectal fat, and the fascia was so adherent that the greatest care had to be taken lest the rectum should be inadvertently opened. Between the bowel and the upper part of the vagina the adhesions were very firm, but above this the separation of the anterior surface was easier. Consequently, it was only after a somewhat tedious dissection that a loop of rectum was isolated and cleared upwards as far as the pouch of Douglas, and downwards until the posterior surface of the vagina was laid bare for quite an inch. This loop was then drawn to one side by a gauze retractor.

The second stage of the operation—the removal of the uterus—was now entered upon. The pouch of Douglas was opened, and the fundus of the uterus grasped and drawn out. First on one side and then on the other double ligatures were applied between the ovaries and the uterus, and the upper part of both broad ligaments freed. Next the peritoneum in front of the cervix was incised and pushed and dissected downwards till the anterior wall of the vagina was sufficiently exposed. Both uterine arteries were then divided and ligatured, and the uterus was removed by cutting across the vagina, whose posterior surface had been cleared, it will be remembered, in the first part of the operation. In carrying out these steps there was at one point very considerable difficulty. The vaginal wall on the right side of the cervix and at the base of the broad ligament was drawn up in a cone-shaped recess, and firmly fixed to the pelvic wall by dense fibrous tissue. This was carefully dissected away, fortunately without opening into the ureter. The possibility of such an accident happening was considerable, for the right ureter was almost certainly involved in the inflammatory tissue.

The Third Stage.—After the removal of the uterus the search for the ureters began. The position of the bladder was made clear by passing a pair of curved lithotomy forceps through the urethra and opening the blades. It was necessary to separate the anterior vaginal wall still further down in order to expose the posterior part of the trigone sufficiently. The left ureter was then felt for in the firm fatty areolar and fibrotic tissue on the left side of the bladder. It was eventually located by feeling it between the fingers, one finger being inside the peritoneum. The tissue overlying it was taken up by two pairs of French vulsella and divided between them until at last the white ureter was exposed. It was hooked up on an aneurysm needle, traced downwards to the bladder, and isolated for about 2½ in. Then it was surrounded by a loop of thick silk and left, whilst the search for the right ureter was prosecuted.

This proved futile. No trace of the second ureter could be found by any of the aids that had been found useful on the other side, and attempts at dissection in the mass of fibrous tissue soon made it evident that it would only be found if it was cut into. As a last resource, it was determined to open the bladder through the trigone, look for the orifice, and pass a catheter as a guide.

Before doing this that portion of the bladder through which the left ureter passed was cut out. Fortunately this was safely accomplished and the orifice surrounded by a good margin of mucous membrane preserved. A sterilized No. 2 black French catheter was passed into the ureter for 3 in. and tied in. The catheter and ureter were wrapped in gauze and held to one side.

The hole thus made in the bladder was enlarged transversely until it was sufficiently large to permit of a good view of a portion of its interior; but no ureteral opening could be seen, and with one finger in the bladder and another outside nothing could be felt that could possibly be imagined to be a ureter.

The search for it was now, perforce, abandoned, with the consoling reflection that it would be possible to deal with the excretion from the right kidney at a later period by nephrectomy.

The peritoneum was closed by uniting the serous covering of the posterior wall of the bladder to the upper edge of the opening in Douglas's pouch. The vaginal opening was sewn up, and a second row of Lembert sutures effectually closed it.

The opening in the base of the bladder was too ragged and too deeply situated to enable its closure to be attempted with any prospect of success, so it was left.

The left ureter was now implanted into the front of the rectum on its left side. Through a small longitudinal incision ¼ in. long a pair of artery forceps was passed from within, was made to lay hold of the catheter and draw the end of the ureter into the rectum until a full inch lay within the bowel. A couple of sutures closed the opening round the ureter, and the portion of the ureter just outside the rectum was embedded between two folds of the bowel coats, which were drawn over it by three or four sutures. Some of these took a hold of the wall of the ureter to make sure that it would not slip out of the rectum. When the gut was replaced in its position, the ureter could be just seen entering it about 4 in. from the anus. At this stage the altered position of the bowel seemed to offer a better prospect of finding the right ureter, and a considerable layer of fibrous tissue alongside the pelvic wall suggested its possible position. The search, however, again proved fruitless, and it was at last realized that the sloughing of the pelvic tissues, which had resulted in the bladder becoming adherent to the right pubic ramus, had dragged the ureter very much out of position, and that, if found at all, its safe separation with its orifice intact would be a practical impossibility.

The large wound was, therefore, cleansed and closed. Its mid-part, above the seat of the implantation, was drawn together by continuous deep catgut suturing. The space above, just below the sacral section, was drained by gauze packing, and the space below by a smaller gauze pack, and a tube passed down on the left side of the bowel to the opening in the floor of the bladder. The skin incision was closed, except around the drains.

The bladder was also drained by a strand of gauze passed through the urethra, and another gauze drain was placed in the vagina.

The patient was under the anaesthetic for three hours, and was transfused towards the close of the operation. She suffered severely from shock afterwards.

The subsequent progress of the case was satisfactory. The chief fear lay in the danger of the wound becoming contaminated from the interior of the bladder, but this was prevented by the care with which the Sister of the ward changed all the packing and the gauze drains every four hours, and the wound never gave the least cause for anxiety. The catheter came away on March 21st, and afterwards urine escaped from the rectum as well as from the vagina. By March 24th the rectum would retain the urine for an hour at a time.

By the end of April the patient had sufficient power of control that as much as 30 oz. of urine were collected in twenty-four hours, but this did not represent the whole of that passed by the rectum, for some escaped during sleep. Dr. Gruner's examination of this led to the belief that the functional capacity of the left kidney was good.

On May 8th the patient was sent to the Ida Convalescent Hospital for a month to recuperate, and returned for the second operation on June 9th.

Second Operation.

Dr. Gruner having confirmed his previous investigation as to the functional adequacy of the left kidney, the right kidney, which was quite healthy, was removed on June 25th. During the operation a bougie was passed along the right ureter to the bladder, and could be felt by an assistant with a finger passed through the enlarged urethral aperture to lie against the bone at the side of the pelvis, and to be incapable of being moved

about by his finger. It did not seem to enter the bladder, but when pushed on it was felt to bend.

From the time of this operation the patient's vulval dressing remained quite dry, and no more urine escaped from the vagina. But for some time the rectal control seemed inefficient, probably owing to the neurasthenic state which succeeded the operation. However, she gradually recovered from this condition, and for some time before going to the Ida, on July 23rd, she had been able to keep herself quite dry and to retain urine for one and a half to two hours.

She went home to Ireland on August 19th, and at that time could retain the urine for three and sometimes four hours. There was still a small sinus connected with the nephrectomy wound and another small sinus just below the line of the sacral section. There was hardly any secretion from either. The notes state that she remarked on more than one occasion that "the result of the operations is worth all her pain and trouble several times over."

Subsequent History.

She has reported her satisfactory condition on several occasions. The last time was on March 30th, 1910—just before this was written. She stated that she had never lain a day in bed since she left Leeds, and that she does her work about a farm, her house work, and the washing.

She can retain her urine about three hours, has no need to wear anything, and walks about like anyone else.

She only wets her bed when she happens to sleep unusually soundly. Both sinuses have healed, and her friends say she looks as if there is nothing the matter with her.

It must be evident that the patient owes a very great deal to the experienced skill of the anaesthetist, Dr. Douglas Seaton, as well as to the zealous care of the Sister of the ward, and to them, as well as to Mr. J. A. Coupland and Mr. L. R. Braithwaite, who at various times gave me valuable assistance, I desire to acknowledge my own obligation.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, February 12th, 1910, p. 362.

A CASE OF INTRACRANIAL TUMOUR RELIEVED BY A DECOMPRESSION OPERATION.

BY ROBERT KENNEDY, M.A., D.Sc., M.D.GLASG.

THE majority of patients in whom it is found necessary to perform a palliative operation for relief of cerebral compression due to lesions which cannot be radically dealt with, return to their homes after the operation has been recovered from, and therefore it is that few opportunities occur in such cases of obtaining autopsies. It is, perhaps, therefore desirable to publish this case, for the patient, after going home, returned to the hospital to die, and an autopsy was fortunately secured.

The patient who suffered from this growth was a fisherman, aged 26 years. His troubles commenced in December, 1908, with headache and giddiness and some vomiting. In March, 1909, vision in his left eye began to fail, and soon the right eye was equally affected. By the middle of May he was quite blind in both eyes. For his defects of vision he became a patient of the late Dr. Meighan, who, upon diagnosing intracranial mischief, sent him to me.

Fig. 1.—Hernia of intracranial contents through aperture made in skull to relieve compression due to inoperable growth.

When he came under my care in the Western Infirmary on August 11th he was suffering from three distinct general indications of cerebral compression. First, he was found to be completely blind, and both discs showed advanced optic atrophy. The pupils were both widely dilated and did not react to light. Ocular movements were not affected. Secondly, he suffered from severe pain in the head, which was of a very constant nature and prevented him from sleeping, and was worst over the vertex. Thirdly, he suffered from attacks of vomiting, although this sign was not so constant as it had been. He also answered questions slowly and showed other signs of intellectual torpor. Beyond these indications there were no other signs, and therefore localization of the growth was out of the question. The reflexes were present, with the exception of the pupillary reflex already referred to, and were somewhat exaggerated. There was no staggering gait nor history of such, the patient being able to walk about without any difficulty, except that due to his blindness. With the exception of the blindness and a diminution of hearing in the left ear, there were no evidences of cranial nerve affections; also there were no indications in the trunk or limbs of an irritative or destructive central lesion. Urine was normal. Temperature was normal and the pulse was slow. In his past history there was no indication of syphilis.

Operation.

Localization of the tumour being impossible, it was useless to operate with a view to radical treatment. Also, on account of the advanced optic atrophy, it was hopeless to expect recovery of sight by means of relieving intracranial tension. His headache, however, was so severe as to be almost insufferable, and his vomiting was at times very troublesome. To relieve these two distressing symptoms it was decided as palliative treatment to perform a decompression operation. With this in view, on August 25th, 1909, a piece of bone was removed from the right parietal bone close to the lambdoid suture. When the dura was slit the brain bulged forcibly, and showed no pulsation, but the veins were turgid. The soft parts were sutured over the bulging brain.

As the result of this operation headache and vomiting disappeared at once, and do not appear to have troubled him again. He left hospital on October 6th, and on November 17th he writes: "I came home feeling pretty well, but since I came home a large lump has formed on the crown of my head, and I had to call in the services of the local dispensary doctor, who probed the lump and found that it contained only water, which is now flowing out of it for a fortnight past without any diminution of the lump." It would appear that this swelling had been tapped, but in any case the puncture appears to have healed, and on account of the increasing size of the lump, which had now assumed the proportions of a newly born child's head, he was sent back to the infirmary, where the lump burst, and he died of meningitis.

Necropsy.

At the *post-mortem* examination by Professor Muir, to whom I am indebted for this report, it was found that "to the left side of the pons there is an irregularly rounded tumour measuring about 1½ in. from before backwards and from side to side, and about 1 in. in thickness. The tumour is adherent to the anterior margin of the cerebellum, and has apparently grown from the membrane. The pons has been pushed to the right side, and has been distinctly compressed by the growth. The growth is composed of a comparatively firm tissue which is very vascular in places, and there are yellowish areas which indicate degeneration, and probably previous haemorrhage. The tumour is a fibro-glioma. In some parts there is a dense fibrillated structure, but even here the glial character of the cells can be distinguished. In the looser part there is a delicate reticulum with large glial cells which show numerous branching processes. In places there are numerous wide and thin walled vessels, some of which show thrombosis, and there is a good deal of haemorrhage around."

The growth was situated under the tentorium, and was in such a position that its effect on the blood stream through the veins of Galen must have been pronounced, and this would account for the enormous intracranial pressure developed. The brain showed very considerable distension of the ventricles. It is not the mere volume of the growth which has given rise to the intracranial pressure but merely its effects on the circulation. I have seen enormous increase of intracranial pressure which caused forcible extrusion of a portion of the cortex through an aperture in the skull, and which on tapping the ventricles and drawing off the fluid, immediately subsided, and permitted free displacement of the brain within the cranium for purposes of exploration.

Coursing over the tumour in this case appear trunks of the glosso-pharyngeal, vagus, auditory, facial, and trigeminal nerves, and yet none of these, with the possible exception of the auditory, showed previous to the operation any sign of being interfered with. Likewise, there was lateral compression of the left lateral hemisphere of the cerebellum of the left middle peduncle of the cerebellum and of the pons, and certainly, at least until near the end, when I had no opportunity of examining his condition, these displacements were not evidenced by any sign.

The site of the cranial opening was carefully chosen. A cranial opening as a decompressive procedure would serve to relieve pressure no matter in what part of the skull it was made. It is necessary, however, to bear in mind that when an opening in the bone and dura is made when there is great pressure, the cerebral substance is usually forced through, and the function of the cortex is therefore apt to be destroyed or damaged. It is no use leaving the dura intact, as this would make the operation quite useless. The bulging of the brain through the aperture, which ought to be of a large size, has the result of causing effects of a more or less serious nature according to the situa-

tion of the opening. Therefore, the opening must always be made over those parts of the cortex which can be dispensed with by the patient with least inconvenience. In right-handed individuals the left side of the skull being that containing the educated association centres should not be chosen unless there is some very special reason for choosing that side. I have seen in one case in which I made an opening over the left temporo-sphenoidal lobe in a right-handed individual aphasia develop simply from the centre in Broca's convolution having its function thrown into abeyance by being involved by the protrusion in the neighbourhood. Also proximity to the fissure of Rolando must be avoided, so as to save the motor areas in front of that fissure and their sensory representations behind, as hemiplegia would be a very likely result of an opening in this position. A good area to choose is over the temporo-sphenoidal lobe, as Cushing points out; but this should be chosen on the right side in right-handed individuals only, and the left side, though also recommended by Cushing, should be avoided if possible in right-handed individuals, for the reason of avoiding any interference with the neighbouring educated association centres. In left-handed individuals, of course, the reverse applies.

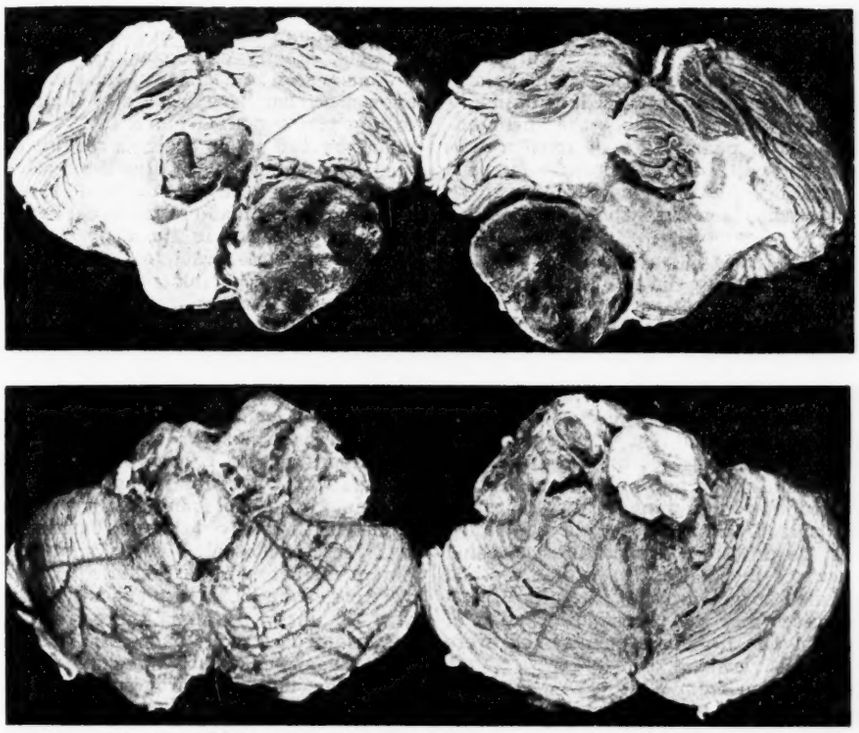

Fig. 2.—Intracranial fibro-glioma, compressing pons, medulla, and right lobe of cerebellum

In the present case I chose the situation between the occipital and parietal lobes because there did not appear to be any chance of causing inconvenience to the patient by choosing this site. Interference with the centre for vision or with the optic radiation from protrusion in the neighbourhood of the occipital lobe would result in hemianopsia in the event of sight being restored; but in this case this consideration was of no moment, for restoration of sight was out of the question. Such a restoration is one of the happiest events in these operations, and it is almost sure to follow if the operation is undertaken early enough, but in this patient the optic nerve had been destroyed. Therefore there was nothing to be lost by choosing this region as the site of the bone defect, and the opening in this region permitted the formation of a better hernia in a more convenient situation, and the result was that he was not in any way incommoded by any damage to the cortex which resulted from the hernia cerebri.

THE CULTURAL CHARACTERISTICS OF THE MICROBACILLUS OF ACNE.

BY E. H. MOLESWORTH, M.B., CH.M.SYDNEY.

(From the Lister Institute of Preventive Medicine, and the Dermatological Department, King's College, Hospital.)

THE object of the present research on the microbacillus of acne was to reconcile, if possible, those accounts of its biological and cultural properties which have been given by recent contributors to the subject, with those originally described by Sabouraud in 1897. Such work is rendered all the more necessary when it is realized how great are the differences in the pathogenic qualities ascribed to this bacillus by the various authors who have treated the subject.

In order to bring these discrepancies of opinion clearly before those interested in the subject it is necessary briefly to refer to the principal works dealing with the acne bacillus.

It was Unna[1] who in 1896 discovered this organism in the comedo, but who, being unable to cultivate it, drew, from purely histopathological data, the conclusion that it was the cause of the comedo and the subsequent suppuration. The classical work, however, upon the subject is that of Sabouraud,[2] who, studying the organisms both in the lesion and in culture, was able to speak more authoritatively on the subject. He assigns to the microbacillus the causative agency in the production of the comedo, but decides that the suppuration is due to the staphylococcus. This opinion he supports, first, on the histological grounds that the staphylococci are found in the phagocytes, while he was never able to find microbacilli undergoing the process of phagocytosis in these cases; secondly, because he was never able to produce suppuration even by injecting huge quantities of microbacilli under the skin. For the cultivation of the microbacillus a special acid glycerine agar was required, and the details of its preparation will be found in his work. The inoculation was made with the central portion of a seborrhoeic filament, which, by the aid of a lance-headed needle, was carried into the medium to a depth of several centimetres. Incubation at 37° C. results in rapid growth of staphylococci of the non-liquefying variety, followed in four days by the appearance of a red-brown button, which gradually increases until it reaches the size of a small currant. This is the culture of microbacilli, which can be obtained pure by reinoculating after a month's growth, at which time the staphylococci are found to have died. He never succeeded in obtaining an ordinary stroke culture, but obtained subcultures by several other methods—for example, by inoculating and incubating eggs. These researches were performed at a time when anaërobic methods were very imperfect. Inoculation experiments on animals were uniformly negative in Sabouraud's hands.

These results were confirmed by Gilchrist,[3] but it is extremely doubtful whether the organism he was dealing with was identical with that of Sabouraud. Cultures of his bacillus were fatal to guinea-pigs and white mice in some cases.

In this state the matter rested for some years, the conclusions of Sabouraud being fairly generally accepted in France and England.

Then followed in 1907 some work on the sebaceous

glands by Hallé and Civatte,[4] who, in making anaërobic cultures from comedones, found constantly colonies of an anaërobic organism which corresponded very closely in microscopical characters with the organism seen in the comedo. This they pointed out to Sabouraud, who, with Hallé, compared the organisms obtained by both methods, and found by inoculating one of Sabouraud's cultures in a deep glucose-agar tube by the stroke method (which Hallé and Civatte, pupils of Veillon, used), that Sabouraud's organism grew only anaërobically. This is a surprising fact, the only explanation for which is that the microbacilli in the centre of the material used for inoculation in Sabouraud's cultures were so protected by the surrounding fatty material that the penetration of oxygen was insufficient to prevent growth. At the present moment Sabouraud has only modified his previous teaching in so far that he impresses the fact that the microbacillus is anaërobic in culture.

The next contribution to the subject was that of Fleming,[5] who, in describing his cultural experiments, came to some conclusions at variance with those of Sabouraud. In the first place, he describes pure cultures of microbacilli by surface inoculation of pus from cases of acne, on a medium described by him in his work. This fact and the failure to grow staphylococci in all cases, led him to the opinion that the latter when present were only the result of accidental contamination. Accordingly he makes the microbacillus the cause of both comedo and pustulation—a conclusion supported by his success in obtaining a pustular eruption by rubbing a culture into the arm of a susceptible person. This Sabouraud had failed to obtain. Secondly, he described his cultures as being made by ordinary surface inoculation, by which method Sabouraud always failed to get growth. Results of calculation of opsonic indices and the therapeutic action of vaccines prepared from the organisms cultivated were also given in support of his views.

This paper evoked criticism from Whitfield,[6] who maintained his previous opinion that suppuration in acne was due to staphylococci by reference to histological and cultural experiments, and could not agree that the results of opsonic work justified the conclusions drawn by Dr. Fleming.

Quite recently a paper by Südmersen and Thompson[7] appeared recommending the use of a strongly acid agar with the addition of horse serum, but the most significant part of the work was their recommendation of anaërobic methods for the cultivation of the organism.

Thus as the matter stands at present the microbacillus is described as being aërobic and pyogenic by some, anaërobic and non-pyogenic by others, and a multitude of minor differences in characters morphological and cultural are disputed.

My own personal work consists of a series of primary cultures from cases of acne, now totalling over 30. The materials used for inoculation were generally comedones, sometimes seborrhoeic filaments and pus.

The medium employed for these cultures was simply 2 per cent. glucose agar in deep shake tubes or stabs, or slopes incubated anaërobically. Personally I find the most convenient method for isolating pure cultures the deep shake method as recommended by Veillon. The agar is melted and allowed to cool to about 45° C., when a drop of an emulsion is added, made by crushing a comedo, or such material as is to be used, in a few drops of salt solution, mixing well and transferring to a second tube 3 or 4 drops from the first, and 10 to 20 drops from the second to a third. The agar is allowed to solidify and the tubes incubated at 37° C. By this method in the second and third tubes isolated colonies are obtained and can be easily picked out for subculture. This is most easily done by using a sterile Pasteur pipette drawn out to about 1·5 mm. in lumen. To this a rubber tube with a mouthpiece at one end is attached, and when the tube is held horizontally against the light the pipette can be pushed down to the colony, which then is sucked up into the lumen, withdrawn, emulsified, examined, and re-inoculated by a procedure exactly similar to that described above.

In cultures made from comedones or pus by this method staphylococcic colonies appear in a day or two, chiefly confined to the upper aërobic areas of the first tube; but after an interval of four days minute colonies appear in myriads, confined to the anaërobic areas. These slowly increase in size, and when discrete assume a lenticular form or often a shape composed of regularly intersecting lenticular bodies; the colour of these colonies is greyish-white. Scattered amongst these white growths, especially if the material inoculated has been a comedo, are seen a few similarly shaped colonies, but red and larger in size.

On microscopic examination the organism found in the white colonies is seen to be a short plump Gram-positive bacillus, exactly corresponding in appearance with the organism seen in a smear of the comedo. The red colonies show cocco-bacillary forms also Gram-positive, but not recalling the organism found in the comedo. Subcultures made by the shake method readily show the anaërobic character of both these organisms which only grow at a distance not less than 1 cm. from the surface.

Stab cultures made in the usual manner in glucose-agar tubes give growth in the deeper parts of the stab, but show no special characters. On slopes inoculated from a pure culture of the microbacillus, incubated in a Bulloch's apparatus or Buchner's tube, isolated whitish colonies or a continuous growth is obtained according as a dilute or thick seeding is made. By these surface inoculations one obtains longer and more diphtheroid organisms with occasional irregular forms, contrasting with the uniform short plump forms of the mother colony.

Cultures may also be obtained in glucose broth incubated anaërobically, but a large amount of material must be inoculated. On ordinary agar, and in ordinary broth, attempts were almost uniformly futile, or such an insignificant growth occurred that one doubted whether the seeding had increased at all. For a very long time attempts to obtain an aërobic culture failed, but finally, by using a very old strain frequently subcultivated, an aërobic growth was obtained. This is more likely to succeed when material from a slope culture is used than when a colony from a deep shake tube is inoculated.

Similar methods are successful in cultivating the organism growing in red colonies, but the colour production soon diminishes on subcultivation, and is not evident on slopes.

To compare this organism with a culture obtained from Sabouraud was the next step. In this I quite confirm the results obtained in Paris, an emulsion from Sabouraud's culture inoculated by the shake method growing only in the anaërobic areas. Also, I was able, after some difficulty owing to the lack of sticky coherence required for this method of inoculation, to transfer a colony from an original culture in a shake to Sabouraud's medium in the manner described by him. The mass increased and assumed a brownish hue as seen in Sabouraud's culture.

These cultures have been accepted by Sabouraud as identical with the organism described by him, but a culture of Fleming's organism when shown to him was not recognized as being identical with the microbacillus. With regard to animal inoculations made with the microbacillus, negative results with guinea-pigs were always obtained. The morphological and cultural characters of Gilchrist's bacillus, and its marked pathogenic qualities for guinea-pigs and white mice, lead one to think that his organism was more probably a form of streptothrix, and not the microbacillus of acne. In the human subject no result was obtained by rubbing in large quantities of the culture.

In comparing the organism isolated by anaërobic methods with two strains obtained from Dr. Fleming and a third obtained through Dr. Eyre of Guy's Hospital, a considerable number of important differences was found. First, and most important, it was found that Dr. Fleming's organism was strictly aërobic, growing only in the uppermost centimetre of a shake or stab culture, and never in the depths. On slopes incubated anaërobically no growth was obtained. Secondly, his organism grew quite readily, and appeared in about forty-eight hours on ordinary agar, and in ordinary broths, on which media the microbacillus, even under anaërobic conditions, is at least extremely difficult to cultivate. Even on glucose agar four days elapse before the colonies of microbacillus become evident. It was on these characters that cultures shown to Sabouraud were rejected by him.

About two months ago, however, I obtained a fourth strain from Dr. Fleming, and, much to my surprise, found that it grew anaërobically, being, in fact, exactly similar

to those growths obtained by educating the microbacillus to aërobic growth. This culture is undoubtedly different from the others, and is probably the true microbacillus.

In drawing conclusions from this work we are bound to consider, first, whether the organism cultivated by Dr. Fleming was identical with that grown by Sabouraud. I am forced to the opinion that this is not the case, since it is inconceivable that an organism really an anaërobe should be so changed in its characters by cultivation under anaërobic conditions as quite to lose the power of growing anaërobically. And even a very old strain of microbacilli which has been educated to aërobic conditions will, if transferred to anaërobic conditions, immediately reassert its preference. The early appearance of growth in Fleming's cultures, which is always less than the four days necessary for the first sign of microbacilli in cultures, is also a point against the identity. Again, the pustular eruption described by Fleming on inunction of a mass of his organisms into the arm of a susceptible person is not obtained by a similar experiment with Sabouraud's organism. Now, since it is admitted by all who have compared the two, that the organism seen in Sabouraud's cultures and that obtained by ordinary anaerobic methods are identical, there is no reason again to distinguish between Fleming's organism and the anaërobe.

The next question for consideration is, Which is the real microbacillus of acne?

In the first place, Fleming's organism is admittedly difficult to obtain, and a culture has not been forthcoming in my hands or in those of Dr. Whitfield, in spite of numerous essays. On the other hand, the colonies obtained by anaërobic cultivation are in myriads, as would be expected when one remembers the vast numbers of the organisms in the comedo. Again, Dr. Fleming does not mention a single instance of successful cultivation of his organism from comedo, all his cultures having apparently been made from pus, which is more liable to contamination and not so rich in the organism whose cultivation is sought as the comedo.

Most of Dr. Fleming's conclusions seem to have been based upon the opsonic indices of his patients to the organism cultivated. But it seems to me unjustifiable to pronounce an organism the cause of a particular lesion on these grounds. There are at least other possibilities.

With regard to inoculation experiments, at first sight the results published by Dr. Fleming appear more promising, but it is to be remembered that comedo formation and not suppuration is the essential lesion of acne vulgaris, and no account of a production of comedo is given in the description of his results. In addition, treatment with vaccines of Fleming's organism apparently caused increase of the amount of pustulation; but no mention is made of the disappearance of comedo under such treatment.

The inoculation experiments by inunction with the anaërobe are, it is true, unconvincing. But nearly everybody is at least seborrhoeic, and the liability of the subject to react to the presence of the organism by comedo production seems to be limited, in the vast majority of cases, to the age of puberty and early twenties, and then to certain well-defined localities—for example, face and back where inoculation results would be open to question. Those who have suffered from acne in their teens appear, as a rule, to become immune to the organism to the extent that the only reaction observed is a persistent excessive fat secretion.

Next, as to the causation of the pustulation, on only one occasion did I fail to find staphylococci in culture from pus, though it is only fair to acknowledge that Sabouraud in his vast experience has occasionally found cases which gave no staphylococci. It is true also that microbacilli can be cultivated in great numbers from the pus, but not more than might be expected considering the amount of comedo débris present in this material.

In conclusion, a great deal has been written about media for the cultivation of this organism. In my opinion the complicated agars recommended are quite unnecessary. The secret of success in cultivating the organism is the use of anaërobic methods. Under these conditions a simple and easily prepared medium like 2 per cent. glucose agar gives luxuriant growth. Südmersen and Thompson, who also used anaërobic conditions, recommend a highly acid medium (+ 40 to phenolphthalein). But even by reducing the acidity to + 20, I was unable to obtain a material which was sufficiently stiff to be sloped.

Dr. Sabouraud still uses his special medium and method of inoculation, but for ease and rapidity of obtaining a pure culture from all sorts of material, I think it must be admitted the anaërobic methods are the most satisfactory.

In conclusion, I wish to express my gratitude to Dr. Ledingham at the Lister Institute for his goodness in controlling my work and advising lines of action; to Dr. Whitfield for the material he provided, and assistance throughout the work, and especially to Dr. Sabouraud for his kindness in furnishing me with the full literature on the subject, and in examining and identifying my cultures.

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ACHONDROPLASIA.

BY

O. EICHHOLZ, M.D.OXON.,

LONDON.

ACHONDROPLASIA is described by Poynton[1] and others[2] as a rare disease. I recently saw five cases, three of which, it is true, were not quite typical, though, as I shall presently endeavour to show, they were undoubted cases. This morning I accidentally passed two more cases while walking in the streets of London within ten minutes' interval, making in all seven cases seen in three or four months. It would not, however, be fair to doubt the accuracy of the statement that the disease is rare on the strength of what may be an unusual experience, especially as five of the above cases were attached to a travelling company of dwarfs.

My remarks will be limited to three of these cases because they differ in some respects from the usual description. Two of them were sisters and the third was a daughter of one of them. Mother and daughter were 18 and about 40 years of age respectively. The aunt was about 42 years of age and a nulliparous widow.

These facts, of course, support the view that the disease may be hereditary, as has been recorded by Porak and others; but Drs. Rankin and Mackay[3] appear to doubt the evidence for this. The transmission of the disease from parent to child is mentioned by Dr. Poynton. The diagnosis is easy in typical cases, and most authors lay stress on the pug-nose, which is so common as to be an almost invariable symptom; but in none of the three cases to which I now refer was this peculiarity present, nor was there anything in the appearance of the head or face to suggest any abnormality. Nevertheless, the great disproportion between the lengths of the four limbs as compared with the body (which was certainly small, as would be expected from imperfect ossification of the ribs and pelvic bones), the small stature, the characteristic appearance of the hands described as *main-en-trident*, the absence of rickety changes such as contracted chest, deformed ribs, curved spine, and bowed legs, leave, I think, no doubt of the nature of the disease. Moreover, the dentition did not appear to have been delayed, and the shortness of the limbs was noticed about the second year, when it is unusual to notice shortening from rickets. The history I was able to obtain may have been faulty, and I was only able to examine one of the two sisters clinically. Apparently this absence of the depression at the root of the nose, which is admitted to be due to a premature synostosis of the occipito-sphenoidal synchondrosis or os tribasilare, has been noticed by others, for Dr. Thomson[4] says "there is usually an abrupt depression at the root of the nose," though he does not say definitely that there are other cases which might not show that peculiarity. The skin is described as

smooth and pliable by Rankin and Mackay, while Poynton says it is usually soft and natural to the touch although it may be redundant over the extremities. In my case the skin of the trunk and head was normal, but over the limbs, especially at the wrists and ankles, it was unusually soft and doughy to the touch, and the same feature characterized the hands of her two relatives.

The pelvis of my patient was contracted, the conjugate diameter at the brim was estimated by external examination at 6.5 cm., and there was a sharp angle between the lumbar and sacral vertebra which gave at first the impression that one had to deal with a spondylolisthetic pelvis, but this I do not think was the case. The uterus was situated in the right half of the pelvis. Presumably the pelvis of her sister was similarly contracted, as she had undergone Caesarean section.

Lordosis is described as one of the characteristics of achondroplasia; this is probably only apparent, the acetabula being displaced backwards from shortening of the ilio-pectineal lines, so that the femora are attached in a plane posterior to that of the normal individual (Poynton). My observation certainly accords with this view of the matter.

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A CASE OF GENERAL SUPPURATIVE PERITONITIS: RECOVERY.

BY HARRY COOPER, M.A., M.D.OXON.,
MEDICAL OFFICER, TOLWORTH ISOLATION HOSPITAL; A MEDICAL OFFICER, SURBITON COTTAGE HOSPITAL.

THE infrequency of recovery from general suppurative peritonitis prompts me to record this case.

Ethel H., aged 8 years, was admitted into the Tolworth Isolation Hospital on November 9th, 1909, on suspicion of suffering from enteric fever.

She was rather a frail little girl, and looked ill; the cheeks were flushed, the orbits sunken, and the lips dry and scaly. Temperature, 100.8°; pulse, 128; respirations, 36. The tongue was furred; the fauces were noted as normal. The abdomen was somewhat distended, and did not move freely with respiration; there was considerable resistance on palpation all over the abdomen, and some complaint of tenderness on the right side, though not directly over the iliac fossa. The spleen was not palpable, and no "spots" were present. Rectal examination revealed no swelling or distension. The heart and lungs were normal. The urine was acid, clear, specific gravity 1024, and free from albumen and sugar.

During the next ten days there was continued fever, with persistence of the abdominal signs; vomiting occurred once on the day following her admission, and once again on November 15th. Some indefinite pulmonary signs in the form of coarse râles and rhonchi, suggestive of enteric bronchitis, also developed, and on the fourth day after her admission a general scarlatiniform rash was noted, though unaccompanied by any other signs of scarlet fever.

On November 21st there were signs of free fluid in the peritoneal cavity, and on November 27th, as this had increased very considerably, a Southey's tube was passed into the abdomen with a view of relieving what was thought to be an ascitic collection. Instead of serous fluid, however, pus welled out from the tube.

On the following day, under an anaesthetic, the abdomen was opened over the right iliac fossa, and several pints of thick creamy pus were evacuated. The peritoneal cavity was then flushed with a large quantity of sterile normal saline solution at 105° F., the rubber flushing tube being freely passed from the diaphragm to the pelvis and from one loin to the other. This huge collection of pus had in fact occupied the entire peritoneal cavity in exactly the same manner as ascitic fluid. Both visceral and parietal layers of peritoneum were represented by continuous sheets of pyogenic membrane, so that the individual coils of intestine were not visible nor consequently was the appendix. Two large drainage tubes were inserted. I regret that I did not on this occasion collect a specimen of the pus, which was thick, creamy white, and inodorous, for bacteriological examination. A specimen taken subsequently from the discharging wound, however, showed the presence of pneumococcus.

From this date the child gradually improved. One incident remains to be recorded. On January 4th, when all seemed to be going on well, she had an attack of haematuria, and the daily excretion of urine was much diminished. This was not accompanied by any other appearance of illness either objective or subjective; there was no elevation of temperature or alteration of pulse, and by January 15th no blood or albumen could be detected, and the kidneys were acting well.

On January 20th the wound was closed, and on January 31st the child was discharged from the hospital.

I would call attention to three points of interest in this case.

First, as to the diagnosis: This seemed at first to lie between enteric fever and appendicitis. The general appearance of the child suggested enteric; the abdominal signs were consistent with that view, and the advent of bronchitis supported it; moreover, the child did not become worse. On the other hand, the abdominal signs were the predominant feature of the attack, and the immobility of the abdomen was greater than is usually seen in enteric fever; moreover, there was no enlargement of spleen and no "spots"; the first Widal reaction was negative, but that was on the seventh day of illness and too early to be conclusive; when the second Widal was also negative signs of fluid had already appeared in the abdomen. At this stage tuberculous peritonitis seemed to be the diagnosis. It was only when the Southey's tube revealed the presence of pus that the diagnosis of general suppurative peritonitis was established.

The second great point of interest is that a general suppurative peritonitis should recover at all, especially at so late a stage, and this in itself suggested a pneumococcal infection, which was found to be the case.

Thirdly, a puzzling feature was the rash which appeared four days after the child's admission. This rash had the exact distribution and character of a scarlet fever exanthem, but there were no confirmatory signs in tongue or throat, nor was there any desquamation more than the powdery state of the skin so often present in patients who have been some time in bed. I looked upon the rash as a septic one. The occurrence of haematuria, however, during convalescence, which I could not otherwise account for, and which in its abrupt onset, its mild course, and rapid termination was so suggestive of a slight scarlatinal nephritis, again raised the possibility of that explanation of it. If this was so, the child had scarlet fever concurrently with her peritonitis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARCINOMA OF THE MALE BREAST.

IN connexion with Dr. Bingham's case of carcinoma in the male breast (February 19th, 1910), I think it may be of interest to record the fact that I have seen two such cases during the present year. Both were natives of Travancore, S. India. One of the cases, which presented all the naked-eye appearances of scirrhus of the breast, did not submit to operation, and I have, temporarily at any rate, lost sight of him.

The other I operated upon. He was a native, aged 65, and said that he had first noticed a small lump near the left nipple four years ago. This gradually increased in size until about a year ago, when he received an injury to the growth. Soon afterwards the skin over the tumour began to give way, and on admission to hospital there was a typical cancerous ulcer (about 3½ in. long by 1½ in. broad) with very hard raised edges (as shown in photograph).

The usual radical operation of removing pectorals and fascia and clearing out the axilla was performed. Some of the glands in the latter region were very hard, though

small. In spite of undermining of skin edges, a raw surface of about 3 in. by 1 in. had to be left to granulate. This is now healing well. On section the tumour was found to be a typical scirrhous cancer.

I may add that, while 61 excisions of upper or lower jaw, 14 excisions of tongue, 6 excisions of the (female) mamma, and 146 operations for the removal of cancerous growths of the cheek or lip have been performed during the last five years at Neyoor Hospital, the above case is the first of carcinoma of the male breast which has been operated on in that period.

JAS. DAVIDSON, M.D.Edin.
L.M.S., Neyoor Hospital, Travancore.

HIGH TENSION AND CAVITATION.

AN idea that the arthritic diathesis is antagonistic to the incidence of tuberculosis is, I believe, more or less prevalent in the medical profession.

Now the arthritic diathesis is a conception of "disease affecting the joints," and may include both gout and rheumatism, but while these two affections occupy extreme poles in the semeiological scale of arterial tension—gout being a high tension disease and rheumatism a low—yet they appear to be equally uncommon as complications or concomitants of tuberculosis.

Assuming that this is the accepted position, I venture to record a case in which high tension and pulmonary cavitation coexist, in the hope that it may elicit opinions and suggestions of value in the conduct of similar conditions.

A man aged 53, born and resident in Canada, is now travelling in Europe for pleasure. He suffered eight years ago with tuberculosis, which quieted down and left only a "tendency to bronchitis," which probably, rightly interpreted, means a tendency to secretion on the part of cavities left by the antecedent tuberculosis. I first saw the patient on November 29th, and prescribed some nitromuriatic acid and nux vomica for slight digestive disorder.

He then went to Les Avants (altitude 3,000 ft.), and I heard nothing further of him till December 10th, when his wife telephoned that he had had haemorrhage. This was of no great amount, but I noted a somewhat high arterial tension, in consequence of which I advised him to come down to Montreux (altitude 1,200 ft.).

Since the first onset there have only been three days on which there was no trace of blood, while there have been recurrent haemorrhages of increasing severity at intervals of eight or ten days. As I saw more of the patient, I found that the arterial tension was habitually high, and that he had been credited in Canada with a "renal pulse." There are considerable cavities at both apices, but the haemorrhage comes from the left apex, as gathered from slight crepitations which may be heard there at times of haemorrhages. The temperature remains about 98° F.

Apart from the haemorrhages, the patient remains in excellent health and spirits, in spite of being confined to bed and chair and having all his wine and smokes and most of his food knocked off.

I have strapped the left side of the chest with the object of restricting its movements—a practice which I find useful in many cases of pulmonary disease, but which does not appear to be of material use in the present one. I have calmed the nervous system with morphine, kept down the arterial tension with calomel, increased the coagulability of the blood with calcium chloride, and can only hope that the *vis medicatrix Naturae* may step in and seal up the leaks.

I presume that the condition is one of aneurysmal dilatation of arterioles in the walls of an old tuberculous cavity. What is the rational treatment? Is it to plug the cavity with some non-irritant coagulable injection or to compress it by means of an artificially produced pneumothorax?

Montreux. STUART TIDEY, M.D.

AN association for the cure of patients suffering from lupus has been formed at Hamburg. It is to receive a subvention of £500 a year from the city, and two pavilions in the Eppendorf Hospital has been set aside for the accommodation of the patients.

UNDER the will of the late Mr. Frederick Tendron of Tunbridge Wells the Poplar Hospital for Accidents and the London Hospital each receive a bequest of £1,000; the latter institution is also given a third part of the residue of the estate, which apparently amounts to about £35,000.

THE next meeting of the Royal Society will be held on Thursday, May 26th, at 4.30 p.m., when the Croonian Lecture will be delivered by Professor G. Klebs, on alterations of the development and forms of plants as a result of environment. The soirée announced for May 25th will not take place.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. BARTHOLOMEW'S HOSPITAL.

A CASE OF GENERAL INFECTION WITH AN ANAËROBIC BACILLUS.

(By G. GRAHAM, M.A., B.C.Cantab., House-Physician.)

[Under the care of Dr. HERRINGHAM]

L. B., aged 3, was admitted on July 3rd, 1909. She had been quite well until July 1st, 1909, when she began to have three to four loose stools a day, but was otherwise well. On July 3rd she seemed listless and apathetic, but did not complain of anything. She was put to bed at 8 p.m., and at 11 p.m. was found in a convulsion. She was brought to the hospital at once, and admitted.

The child was well developed, but in a very dirty condition. She was quite unconscious, and the face was continually twitched and both arms and legs jerked. The pupils were widely dilated and the corneal reflex absent. There were signs of general bronchitis all over both lungs, and at the apex of the left lung signs of consolidation. Nothing abnormal was noticed in the heart or abdomen. The temperature was 103° F., the pulse and respiration were both very frequent. The fits ceased at 2.30 a.m. on July 4th, but at 3 a.m. the child became blue. She recovered temporarily, but died at 4 50 a.m. on July 4th, six hours after she was first found unconscious.

The note from the Pathological Department about the case is as follows: The brain was natural. The lungs showed many areas of haemorrhagic collapse scattered over both lungs but chiefly at the apices, and around these the rest of the lung was oedematous. The larynx and trachea contained frothy fluid. The heart was natural, but the stomach showed a number of small petechial haemorrhages. The spleen was large and firm. The rest of the body showed nothing abnormal to the eye.

Histology.—Pieces of the lung were hardened and sections cut and stained with haemalum and eosin. The only abnormality seen was general congestion of the blood vessels and some catarrh of the alveoli and smaller bronchi.

Bacteriology.—Film specimens of the lung juice, of the heart's blood, and of the spleen were made at the time of the autopsy. The films from the lungs showed the presence of one micro-organism only, a square-cut Gram-positive bacillus, which was present in fair numbers. The heart's blood showed no bacteria microscopically. Films from the spleen, however, showed a few of the same bacilli as seen in the lung.

The character of the patient's illness and the presence of this Gram-positive bacillus in the lung and spleen in pure culture suggested that the patient had succumbed to its action, and it appeared probable, on general grounds, that the micro-organism was either an anaërobic bacillus or else *B. anthracis*. The following steps were accordingly taken to decide which of these alternatives was correct. As it was evident that the bacillus was most numerous in the lung, about 1 c.cm. of juice expressed from the lung was injected into a guinea-pig subcutaneously. Cultures both aërobic and anaërobic were also made, with the usual precautions, on agar and in broth from the lung, the heart's blood, and the spleen, and incubated at 37° C.; eighteen hours later the guinea-pig was dead. Its subcutaneous tissues were gangrenous, and intensely infiltrated with a haemorrhagic exudation showing globules of fat and portions of muscle fibre floating in it. Microscopically the exudation was found to be swarming with the Gram-positive bacillus seen in films of the child's lung. The bacillus appeared to have a capsule in this subcutaneous fluid.

The aërobic cultures failed to show growth. The anaërobic cultures from the child's heart's blood and spleen were negative. The anaërobic cultures from the

lung, however, gave practically a pure culture of the bacillus, as also did cultures from the guinea-pig. This micro-organism from its biological characters was identified with the well-known anaërobic bacillus first described by Welch and named by him *B. aërogenes capsulatus*, and it also produced the change in milk known as the enteritidis change, on account of its being a feature of the *B. enteritidis sporogenes* of Dr. Klein. On the Continent it would seem that this micro-organism is known under the name of *B. perfringens*.

The interest of this case lies in the brief illness of the patient (six hours) and in the fact that this anaërobic micro-organism was found present in pure culture, and was especially numerous in the lung. A section of the child's lung stained by Gram's method showed the bacillus in considerable numbers, both in the blood vessels and also free in the alveoli.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, May 9th, 1910.

Samuel West, M.D., F.R.C.P. (President), in the Chair.

Ankylostoma Duodenale.

Dr. F. M. Sandwith demonstrated by means of the epidiascope microscopical preparations illustrating the *Ankylostoma duodenale* and the entrance of the larvae through the skin into the human body. Until 1898 it was, he said, universally supposed that the larvae of this worm, like most other parasites, entered man only by the mouth, but in that year Professor A. Looss, of Cairo, accidentally dropped upon his own hand in his laboratory a drop of water containing more than 1,000 lively larvae. Thereupon ensued redness and local burning, and eventually anaemia and debility followed, and the eggs of the parasite were found in the faeces of the involuntary experimenter. The latter at once recognized the importance of this observation, but his belief was not shared by others, as it seemed too unlikely a thing to be possible that the larvae should have entered his skin. Hence after being cured of the infection he repeated the experiment purposely on another part of his hand and was able to show the same local and constitutional results. After this discovery of Professor Looss, the speaker said that fortunately it was possible to make use, for experimental work, of an analogous worm which infested dogs—the *Ankylostoma caninum*. Looss carefully selected some puppies which were found to be free from disease and applied to their skins a mixture of charcoal and faeces in which larvae had been bred. The puppies died on the ninth day, and at the *post-mortem* examination anaemia was seen and many young worms were found in the duodenum, all immature and no adults, proving that the infection was recent, and practically the same result was achieved as when puppies had been fed on larvae by the mouth. By infecting a series of puppies on three different days, and then killing the puppies, Looss was able to procure reliable sections of different stages of the disease, for the important thing was to know what happened to the larvae after they had entered the hair follicles, and how did they succeed in getting into the alimentary canal. After devoting some weeks of patient toil to this special investigation Looss was able to prove that the larvae after entering the skin got into the lymphatic vessels, and later into the subcutaneous veins. Having thus entered the circulation, the larvae were transported by the blood current to the right side of the heart, to the capillaries of the lungs, to the alveoli, to the bronchi, to the trachea, and to the larynx, where they wound themselves round the epiglottis and entered the oesophagus, stomach, and duodenum, which seemed to be their goal, for there they became sexually mature.

Dr. C. W. Daniels demonstrated some slides dealing with malaria, Dr. Carnegie Brown showed slides illustrating tropical dysentery, and Dr. A. W. G. Bagshawe explained some microscopical sections from cases of sleeping sickness.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, April 29th, 1910.

Dr. J. B. Hellier, President, in the Chair.

The following were among the exhibits: Mr. H. Littlewood: (1) A case in which *Peridiverticulitis* with a fistulous opening between the bladder and sigmoid had been successfully operated on. The patient, a male aged 50 years, had passed faeces and flatus per urethram for four years, during which time he had been unable to work; there was also a stone in the bladder. He made a good recovery. The portion of the bowel removed showed no evidence of malignant disease, but was a typical example of chronic peridiverticulitis of the colon. (2) A case in which early *Malignant disease* of the upper part of the common bile duct, involving the cystic duct and producing intense jaundice, had been removed. The patient was a man aged 65, who was in perfect health until about seven or eight weeks before the operation; at that time he suddenly became jaundiced; there was no pain and no fever. The jaundice increased in intensity, and at the time of the operation (March 15th, 1910) the patient was of a greenish-yellow colour. He made a good recovery. Dr. A. G. Barrs: A man, aged 30, with *Chronic sprue*. He went to India in 1901, and the sprue began in June, 1908. The attacks generally lasted from two to three months, with intervals of about a month. He returned home in December, 1908, and then began to have sore tongue and tender gums, and consequently could not eat hot food. Latterly abdominal pain and vomiting had been less. He was pale and had lost much weight. His tongue was sore and red, and pharynx red also. The faeces showed the presence of *B. coli* and *B. enteritidis sporogenes*. Mr. A. L. Whitehead: A boy, aged 17, who had suffered from *Chronic otorrhoea* all his life. There had been an external mastoid swelling for three weeks, and facial palsy for one week, but no symptom of intracranial extension, except marked optic neuritis, more intense on the affected side. Very extensive mastoid disease was found at operation, with extensive pachymeningitis externa, the dura mater over the cerebellum, lateral sinus, and cerebrum being diseased, and a large extradural abscess above. His recovery was uneventful; some optic neuritis was still present. Mr. Lawford Knaggs: A man, aged 58, in whom *Dry gangrene* of the arm began the day after the crisis of lobar pneumonia. There was no radial or ulnar pulse, and there was no albuminuria or cardiac bruit. Dr. Wardrop Griffith showed a child, aged 9½, suffering from adherent pericardium, in whom *Precordial thoracostomy* had produced slight improvement. Mr. Constable Hayes showed a man, aged 35, who was suffering from *Secondary syphilis* with condylomata, which caused symptoms of mastoid trouble in a suppurating ear. Dr. Alex. D. Sharp showed a girl, aged 19, suffering from chronic *Oedematous laryngitis*, which had developed suddenly about four years previously. In spite of prolonged and active treatment, the condition was still very pronounced, only a tiny glottic chink being seen on elevating the thickened epiglottis. The vocal cords were unaffected, and there was no pain and no cough. There was no evidence of tubercle and no specific history. The nature of the case was uncertain. Mr. H. H. Greenwood: A case in which a large *Hydronephrosis* had been caused by impaction of a ureteral calculus in a woman four months pregnant. The calculus was removed by laparotomy on May 2nd, and on November 22nd the patient was delivered of a healthy full-term child; the hydronephrosis was then no longer palpable. Dr. Maxwell Telling: (1) A woman, aged 26, suffering from Graves's disease with *Unilateral exophthalmos*. (2) A woman, aged 56, with pernicious anaemia due to *Oral sepsis*. There had been marked glossitis, pyrexial attacks, and active delirium. Vigorous disinfection of the mouth and administration of arsenic was followed by marked improvement in the anaemia, the mental condition becoming almost normal. Dr. Bronner: Two cases of *Asthma* of ten and twenty-three years' duration respectively, regarded as successfully treated by galvano-cauterization of the nasal septum and lower turbinates.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

Friday, April 29th, 1910.

T. H. MILROY, M.D., F.R.S.E., President, in the Chair.

DR. CASSIDY showed a specimen of *Superfetation* in a cat. Its interest lay in the fact that there were two embryos, one occupying each horn, and showing a great difference in period of growth. The smaller did not represent a "blighted ovum," as both microscopically and on section it appeared quite normal. Superfetation, he said, was of not infrequent occurrence amongst mammals, but whether it ever occurred in women was another question. In the thirty-eight recorded instances of bicornuate uteri in women there was no case. Obstetrical literature contained several cases of presumed superfetation, but whether true superfetation occurred in the normal human uterus was very doubtful. With the thickened decidua blocking the lumen of the tube and the plug of mucus which blocked the cervical canal at an early date, the passage of another spermatozoon at a later date was rendered very improbable. Professor THOMPSON said it did not seem beyond the bounds of possibility that the two cells might be impregnated at the same time, and that for some reason one developed and the other did not. Dr. CASSIDY, in reply, said that in looking for an explanation for such cases the question to be answered was, Is it possible for a spermatozoon to live in the passages for four weeks and then fertilize another ripe ovum? Mr. SETON PRINGLE read a note on a case of complete *Transposition of the viscera*. The condition was found in a man, aged 27, who was the subject of extensive cancer of the rectum. The exhibitor opened the abdomen for the purpose of fully examining the extent of the disease, and, if removal was out of the question, of performing a colotomy. He found a transposition of all the abdominal organs, and as removal was impossible, did a colotomy, fixing a knuckle of iliac colon in an incision in the right inguinal region. The heart was also situated in the right thorax, the apex beat being in the fifth right intercostal space, 1¾ in. inside the nipple line. In referring to the theory associating these cases of transposition with twin birth, he pointed out that his patient said he was not one of twins, nor was there any record of a fetus papyraceus. Professor DIXON said that, in twin formation, an early separation in the embryonic plate, so that the resulting twin embryos would be ventrally opposed, was held to afford an explanation of transposition of viscera in one of the embryos. Professor M'LOUGHLIN favoured the view that "transposition" was dependent on a primitive vascular irregularity of the abnormal embryo. Dr. N. C. RUTHERFORD showed (1) lantern slides of a human embryo of the fifth week. The first of these showed the opened chorionic vesicle, the embryo being enclosed in the amnion, while the yolk sac was still attached and lay in close proximity. The second showed the amnion opened, and a very well-preserved embryo lying inside. Other views of the embryo separated from the appendages were shown in conjunction with a millimetre scale which indicated its length to be almost exactly 3 mm. He was of opinion that the embryo had no exact counterpart among those collected by Keibel and Hochstetter. It was intermediate between Figs. XVIII and XIX of Keibel's Normentafeln and between Hochstetter's Embryones Humani Re III and Ma I. That being the case, he expected that further examination of the specimen by serial section and reconstruction would be productive of some profitable results. (2) A lantern slide of the external form of a human embryo, showing ectopia cordis. He stated that, as was to be expected in such a pathological condition, the features of the external form were somewhat anomalous, and did not allow of any exact estimate of the age of the specimen. Judging, however, by the state of development of the limbs, he would place it early in the fifth week. He attributed the condition to the failure of growth of the ventro-lateral process springing from the protovertebrae: this resulted in a defect analogous to that of spina bifida. Professor M'LOUGHLIN said that spina bifida had been produced experimentally by treating the eggs of tadpoles with a weak sodium chloride solution. It was, consequently, suggested that some unusual chemical condition or irregularity of the blood of the mother might be responsible for the condition of ectopia cordis.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Tuesday, April 19th, 1910.

Dr. WARD SMITH in the Chair.

DR. MITCHELL showed skiagrams of the hand showing undescribed bone changes associated with *Tuberculous arthritis*. The photographs showed a curious striated appearance of the long bones, the meaning of which was as yet undiscovered.

Mr. BASIL HALL read notes on 53 cases of intestinal obstruction. The most noticeable point was the enormous death-rate in the case of obstruction by band, the reason being that these cases were only seen when too late, owing to the very deceptive onset of the symptoms. It was pointed out that all textbooks stated that these cases commenced suddenly; experience, however, showed that this was not so. The onset was very gradual, and the symptoms at first were very slight, and it might be not until the intestine was nearly gangrenous that the decisive symptoms appeared. Dr. WARD SMITH said he thought that visible peristalsis should always be looked for, and was a certain sign of obstruction. Dr. JASON WOOD agreed, and instanced several cases showing the difficulty in diagnosis.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

NORTHERN AND MIDLAND DIVISION.

Tuesday, April 19th, 1910.

Dr. C. T. STREET (Newton-le-Willows) in the Chair.

DR. E. R. GAVE (Sunderland), in a paper on the treatment of general paralysis by means of serums, narrated his experience in this connexion with diphtheria antitoxin. He had used it in six cases of general paralysis of the insane. In one of these the patient showed improvement. Probably the serum acted by setting up some absorptive process and not specifically. All these cases were so advanced that nothing more than arrest or transient improvement could reasonably be expected. Dr. A. J. HALL (Sheffield), in a paper on insanity following *Carbon monoxide poisoning*, related the following two cases. In the first, a woman aged 33 was found unconscious in a bathroom soon after going for a hot bath. She showed most of the signs of CO poisoning; there was no smell of gas, and the "geyser" was turned off. By next day she had completely recovered. The second patient was a man engaged to be married to the previous patient. He had been spending a week-end with the family. He too was found unconscious in the bathroom, exhibiting typical symptoms of CO poisoning, the room being full of gas, the light out, but the geyser gas-cock full on. Instead of complete recovery after treatment the patient remained dazed and confused, and had loss of memory and incontinence of urine and faeces. This condition continued practically unchanged up to the day of his death seventeen days later. In this case the speaker raised the question whether the mental symptoms were entirely due to the poison, or was there some prior mental derangement, and quoted the saying, "Whenever an obscure death occurs in a patient about to be married it is suicide." Dr. STREET, in opening a discussion on the question, "Are we doing as much in the form of treatment of mental disorder as we might do?" pointed out that the recovery-rate had not increased during the past thirty years. He advocated a higher form of moral treatment than the usual occupation, recreation, and amusement, a more intimate knowledge of the mental condition of every patient, and particularly a more frank and open method of dealing with it. He believed in discussing a patient's mental symptoms freely with him, whether they were delusions or suicidal inclinations, and had found this method to yield good results, especially in cases of melancholia and alcoholism.

Reviews.

EICHHORST'S TEXTBOOK OF MEDICINE.

THE fourth and last volume of the sixth edition of Professor EICHHORST'S admirable textbook of medicine[1] maintains the high character of those already reviewed which have preceded it. We have on former occasions described the plan upon which is based the author's description of each disorder, and have expressed the hope that he would in the final volume give a full reference to the numerous authorities quoted; he has, however, not added this most desirable information, considering it unnecessary in a mere textbook. This is a pity, because the publication contains such a fund of information that it deserves to be looked upon as more than a textbook; it really is a valuable contribution to the list of books on the subject.

One blemish which persists in this volume is that the names of English contributors are so badly spelt. It is almost impossible to recognize them in the distorted form in which they are presented; for example, in the reference to writers on multiple myelomatosis we read of such investigators as "Mac Inturi, Dabrymple, and Sence Jones"; and "Heyl und White" are made responsible for the ophthalmoscopic recognition of lipaemia in diabetes mellitus. When we have complained of the absence of a list of references and of these orthographic failures, we have practically said all that can be said in the way of detraction; in every other detail the subject is handled in a most masterly way; many facts are given, and the value of various theories is justly appraised.

The volume opens with an admirable essay dealing with diseases of the suprarenal bodies; the pithiness of Professor Eichhorst's treatment of his subject-matter cannot be better exemplified than by his use of Lewin's paper, in which it is shown that in the collected cases of Addison's disease and diseases of the suprarenal bodies the former malady occurs in association with the latter in 80 per cent., without association in 20 per cent.; that suprarenal disease occurs with Addison's disease in 72 per cent., and without it in 28 per cent. of the reported cases.

The tenth chapter deals with diseases of the blood-forming organs and of the blood, including the haemorrhagic diathesis. An excellent account of Banti's disease is given, and care is taken to point out the difficulty of separating the malady from cases of ordinary cirrhosis of the liver and from pseudo-leukaemia or lymphadenoma.

Changes in the fundus oculi in chlorosis are referred to in three groups, namely, those which simulate albuminuric retinitis (Nolan and Knies), optic neuritis (Gowers), and optic neuritis with atrophy (Engelhardt). How firmly the author's ideas are wedded to the possibilities of auto-intoxication is shown by his frank declaration that chlorosis is due to autointoxication from disturbance of the internal secretion of the ovary.

A useful classification of the varieties of lymphadenoma according to the structures most obviously involved provides us with a lymphatic type, a splenic, a medullary, and an enteritic type, the latter suggested no doubt by the admirable description of this form given by Behier, in which the solitary follicles and Peyer's patches are enormously hypertrophied. It will thus be seen that Professor Eichhorst, in common with other clinicians, has adopted, even in this form of blood disease, which does not depend upon the microscopical examination of the blood for determination, a classification which is pathological rather than clinical. It is obvious from a perusal of this volume, which deals so largely with blood diseases and infections, that, despite the large amount of experimental work done in the direction of a more thorough understanding of the problems connected with haemolysis, Professor Eichhorst, as a clinician keenly alive to the advances made in medicine, finds space only briefly to refer to two observations—one by Donath and Landsteiner, who have made observations on the haemolytic processes which appear to underlie haemoglobinuria, and the other a most brief and casual reference to Wassermann's serodiagnosis of syphilis.

A subject most successfully dealt with is that of obesity; the reader will find a very intelligible description of the methods of treatment which Professor Eichhorst has himself found to be efficacious. The reference to the variable results of observations on the output of uric acid in and before an acute attack of gout would be simply amusing were it not that it serves to show how unsatisfactory are the conceptions at present put forward to explain the pathogeny of true gout. Duke's "Fourth Disease" is treated with scant consideration in view mainly of the very large disagreement of English writers as to whether it exists; equally short shrift is meted out to de la Harpe's "Fifth Disease." The acute infective diseases are described under two headings—those with and those without a regular localization of manifestations. Ficker's diagnosticum for the detection of typhoid fever is recommended strongly as being both reliable in verdict and safe in execution. Professor Eichhorst is quite confident that the treatment of typhoid fever by Jez's antityphic extracts has yielded beneficial results. It will cause the reader considerable dismay to learn that the mere exposure of the examiner during consultations with tuberculous patients is capable, according to Moeller, of leading to the entrance upon the mucosa of the nose of the causative organism. A thoroughly helpful section on syphilis, most fully illustrated, closes this volume, giving the reader a sense that this system of medicine forms one of the most reliable guides we possess.

[1] *Handbuch der speziellen Pathologie und Therapie inneren Krankheiten.* Bd. iv. By Dr. Hermann Eichhorst. Sixth edition. Berlin and Vienna: Urban and Schwarzenberg. 1909. (Sup. royal 8vo, pp. 1230; 216 illustrations. M. 22.)

SURGICAL TEXTBOOKS.

THERE is no doubt that students—and teachers too—will welcome the new edition of "Walsham" now issued as the *Practice of Surgery* by W. G. SPENCER and G. E. GASK.[2] Mr. Spencer is responsible for the greater part of the text, which has been rearranged so as to bring nearer together the consideration of diseases and injuries of the same part. He has rewritten a considerable portion, and revised the whole to bring it right up to date. Mr. Gask is responsible for a chapter on examination of the blood and for the illustrations, a great many of which are new. Mr. Jessop has revised the section on ophthalmic surgery, and Mr. C. E. West has rewritten that on diseases of the ear with new illustrations. This tenth edition of an old favourite will establish its reputation more firmly than ever. It is true there are twelve hundred pages for the unhappy student to get through, but it is difficult to see how all he has got to be familiar with can be crowded into less. It is very difficult to discriminate amongst all the new work and decide what may be excluded without leaving a hiatus to confound the examinee. Mr. Spencer seems to have been very successful in his choice. It was almost a pity to set forth the complicated refinements of coxa valga; and, on the other hand, Matas's work on aneurysms deserved a little more space, but, after all, that is a matter of opinion, and Mr. Spencer is certainly not open to the charge of indecision. He speaks definitely on disputed points without undue bias. On one issue he might, perhaps, be convicted—that of taxis for strangulated hernia—but doubtless would offer a defence. Taxis is necessary to establish the diagnosis of strangulation, but surely when once the fact of strangulation is ascertained, the treatment is operative. Mr. Spencer incorporates the recent work on pre-existent sacs in the development of herniae, but hardly makes clear enough how rarely one severe muscular effort is responsible for the causation of rupture, and how seldom "accident" can be alleged to the satisfaction of any but county court judges. The new arrangement which brings, for instance, diseases of bones and joints together is certainly an advantage. Anything which conduces to the consideration of disease on the basis of broad general principle, and then illustrates it by example, is a simplification much to be desired. Only by some such plan can the enormous mass of material now to be digested by the learner be brought within his capacity. The new series of illustrations is an education in itself. The collection of clinical photographs by Mr. Newbolt has been drawn upon, Dr. Hugh Walsham has supplied more of his excellent radiographs, and the coloured plates are decidedly more worthy of such special prominence than is often the case. They certainly add to the attractiveness of the book. All things considered, too, the price is moderate.

[2] *The Practice of Surgery.* By W. G. Spencer and G. E. Gask. London: J. and A. Churchill. 1910. (Roy. 8vo, pp. 1250; plates 48 (20 in colour), illustrations 707. 22s.)

The Professor of Surgery in the University of Pennsylvania has produced a large book purporting to be upon *Surgical Diagnosis*.[3] There is a great deal of useful information in it, some first-rate radiograms, and a multitude of pictures, most of them good. We do not think, however, that as a work on "diagnosis" it is a good book. The underlying idea seems to be, "Here is a lesion; let us make a long list of all the conditions it might possibly own for cause; now let us make choice among them." But for the elucidation of the first principles of choice, or even their enunciation, there is little if any help offered. It would require a good deal of industry or luck to light upon a surgical condition not named or referred to between the covers of this volume, but often there is over-elaboration. Is it necessary to devote a paragraph, out of two pages given to "acute diffuse peritonitis," to the danger of confusing the visceral crises characteristic of angeio-neurotic oedema? On the other hand, the author is at times hardly adequate. For example, he says that "primary carcinoma (rare) of the liver, when it forms a palpable tumour, can be recognized as such only by the careful exclusion of syphilis and of the existence of a primary focus elsewhere. Its diagnosis is of importance, since it is amenable to surgical operation." Is it correct that "typhoidal bone infection . . . exhibits a special predilection for the ribs'? Then, again, the regional arrangement of the chapters lends itself to repetition; a fibroma of the back and a fibroma of the arm do not differ to an extent that makes separate discussion necessary. Dr. Longcope has written a chapter on laboratory diagnosis, and Dr. Pancoast another on x rays in surgical diagnosis. The latter has supplied a large number—the largest yet published according to the author—of x-ray fracture pictures. The reproductions of photographs are good, but the diagrammatic drawings from x rays, of which there are a great many, are almost as difficult to read as the original negatives, so that his labours in that direction have been mostly in vain. The chapter on gynaecological diagnosis by Dr. Anspach is written much on the same plan as the rest of the book. We repeat that as a work on surgery this book is an industrious compilation, well illustrated, well printed, and well indexed, but it does not succeed, as it seems to us, in inculcating sound doctrine of diagnosis.

Another book on the same subject,[4] equally weighty, equally well printed and even more lavishly illustrated, is that by Dr. EISENDRATH. If clinical illustrations multiply at their present rate for many years more there will be no need for students to waste time in going to out-patient departments or doing clerkships in the wards; they will sit comfortably at home and learn the appearances of all the morbid conditions in their studies. Imagine the surgeon of the future saying to his anxious patient, "Dear me, yes, yes, you are exactly like that picture in Dr. Thingummy's atlas; excuse me while I turn it up and see what it is that's the matter with you." However, as we live in an age of short cuts to success, if we want to "get wise quick," it will be difficult to find a better guide just at the moment than Dr. Eisendrath's *Surgical Diagnosis*. He is not free by any means from some of the faults we have found with Dr. Martin, but they are much less in evidence, and at least he is not trying to write a treatise on surgery with the treatment left out, so as to justify the title "diagnosis." The arrangement of the book is broadly regional, but the author has managed to avoid serious overlapping. He opens with a chapter on surgical affections of the head and steers his way through a good deal of contentious matter with great discretion. When an author is bound down to tabulate his faith on the thorny question of cerebral compression and concussion, contusion and laceration, it is not easy to defy criticism; but in this, and in many another table, Dr. Eisendrath comes through the ordeal very well. Not that one can be expected to agree with him in every instance, but none of his dicta will teach the young idea to shoot much askance. The chapter on the abdomen is very well done; for example, he tabulates acute abdominal affections, for bedside purposes arbitrarily, into those in which pain is a prominent early symptom, those with obstruction, those with haemorrhage, and those with symptoms of suppuration, as early signs. It works out not so badly, but the four conditions he feels constrained to throw in as make-weights, under no particular heading, rather strain the balance—"angina sclerotica abdominis," "visceral crises in tabes or in the erythema group," "referred pain from thoracic or spinal affections," and "inflammation of the intra-abdominal portion of vas deferens." He has a long chapter on "the extremities," which of course includes bones and joints, but the heading "diseases of the joints in general" indicates that he is no slave to regional system. After a section devoted to diseases and injuries of the spine, there is an excellent chapter on post-operative complications. Dr. Schram writes on methods of blood examination, including such matters as the Wassermann reaction; Dr. Kolischer is responsible for "methods of diagnosis of renal lesions," including cystoscopy and cryoscopy. For a student actively engaged in clinical studies, who is daily putting to the test the statements he finds in the textbooks of his teachers, and who is unlikely to be led away by the dogmatisms inseparable from the printed page, this book will not be harmful, and, on the other hand, will be a welcome and handy means of reference when in doubt.

An enterprising reader of the second part of the second volume of Professor HOCHENEGG'S textbook of surgery[5] will be driven to find out which of Professor Albert's old pupils is responsible for the various sections of this rather ill-arranged book. He will be able to extract the information from the front pages of the book after a little trouble, and it may surprise him to find that Karl Ewald is the author of the articles on injuries. Whether it is the author's fault, or that of the regional arrangement, or what it is, is open to question, but certainly to get information from this part of the book it has to be extracted and collected and collated before it can be used. Doubtless the information is there, but it is not to be come at without effort. Dr. Friedländer, with inflammatory affections of the soft parts and of the bones, with tumours and with diseases of the vessels, writes so much more simply and clearly that one could wish he had not been cut down to a dozen pages for the consideration of neoplasms, whilst the enthusiastic orthopaedists were allowed to expand congenital dislocation of the hip into sixteen. It cannot be denied that Max Reiner, with the assistance of Rudolf von Aberle, has well used the space allotted to him; and as there is a good index, it does not matter much that some deformities (Sprengel's shoulder, for instance) have wandered off into another volume. His chapters on the inflammatory affections of joints, too, are worth reading; he is not dogmatic, and his generalizations will command sympathy, if not agreement. Throughout the book there is not nearly enough written about treatment. The discussion of such a condition as dislocation of the shoulder with fracture of the shaft of the humerus is quite inadequate. There is very little indeed about the operative treatment of fractures, simple or compound. The methods of dealing with arthritis in haemophilia are dismissed in a few lines. The recent advances in the surgery of the blood vessels do receive notice in small type, but that is all. It is worthy of note that congestion hyperaemia is not regarded in Vienna as a panacea. There are forty-six fairly good reduced radiographs and a large number of illustrations in the text, some of which are very good, some quite bad. The index is a very satisfactory feature, and does a good deal to redeem the book from an unfavourable estimate, and so from injustice.

ELECTRICITY IN MEDICINE.

DR. LARAT understates the value of his work when he describes it as a practical treatise of medical electricity.[6] It is, indeed, a practical treatise, but it is much more. The author, who is the chief of the electro-therapeutic service in the Hôpital des Enfants Malades, Paris, gives us no mere compendium of potted advice as to the modality to prefer in this or that condition, but a work which suggests

[3] *Surgical Diagnosis.* By Edward Martin, M.D. London: H. Kimpton. 1910. (Roy. 8vo, pp. 772; 18 plates; 445 illustrations. 28s.)

[4] *Surgical Diagnosis.* By D. N. Eisendrath, M.D. Second edition. Philadelphia and London: W. B. Saunders Company. 1909. (Roy. 8vo, pp. 835, 574 illustrations, 25 in colours. 28s.)

[5] *Lehrbuch der speziellen Chirurgie.* Edited by Professor Doctor J. Hochenegg. Vol. ii, part 2. *Surgery of the Extremities.* Berlin and Vienna: Urban and Schwarzenberg. 1909. (Sup. roy. 8vo, pp. 530, plates 14, illustrations 268. M. 10.)

[6] *Traité pratique d'électricité médicale. Electrothérapie, radiothérapie, radiumthérapie.* By Dr. J. Larat. Third edition. Paris: Vigot Frères. 1910. Post 8vo, pp. 651; 194 illustrations. Fr. 10.)

that his vast subject has appealed to his imagination as well as to his professional instincts. In its general plan the book is similar to other treatises upon the same subject. There are the usual chapters devoted to technique and apparatus, electro-diagnosis and treatment, and also a specially useful section upon electro-physiology, which includes a number of tracings showing the action of the various currents on the muscles and nerves. The author traces back the first electro-physiological observation to a period before Galvani, and gives the credit to Swammerdam, the Dutch physician and naturalist, who in 1678 described an experiment upon muscular contraction by electricity similar to that which afterwards proved to be the point of departure for such a long line of research. Another attempt at historical rectification is his exaltation of the French worker, Matteucci, who was ignored by Erb, to the position of a founder of electro-physiology. The author looks forward to future developments in electrical medicine—such, for instance, as the direct treatment of infectious diseases by means of high frequency; and also to further advance in electro-biology, and probably in electro-therapy, owing to the work that is being done upon colloidal substances in the organism. The newer therapeutic agents, radium and ionization, are sufficiently but not exhaustively treated. Students of medical electricity would do well to avail themselves of this treatise, not only because of its budget of practical information and its up-to-date summary of electro-medical literature, but also for its freshness of outlook and broad suggestiveness.

Dr. MORTON has written a practical manual, which will doubtless find wide acceptance among practitioners who are occasional workers with electricity and the *x* rays. To describe the *Essentials of Medical Electricity and Radiography*[7] as an understudy to the well-known work of Dr. Lewis Jones is in no sense a reflection upon the originality of its author, since he himself expresses his indebtedness to that classic. He begins with a full description of the supply and application of electrical currents for medical purposes, and then passes to their use in surgery, in diagnosis, and in general and special therapeutics, glancing on the way at the new subject of ionic medication and the ever-widening utilities of cataphoresis. This, the second, edition has now a new section upon radiography, in which the author speaks authoritatively and at length upon that crux of the radiographic question—the focus tube. To instantaneous radiography, with the aid of the Snook or other apparatus, a special chapter is given. As an electrotherapeutist Dr. Morton speaks out of the treasures of a long experience gathered in the electrical department of a large hospital like the London, of which formerly he had charge. He does not believe that electricity is a wholesale curative agent, even in conditions which are supposed by many to be peculiarly subject to its influence. In functional sexual disorders, for instance, he does not admit its efficacy, and, on the other hand, he finds the electric bath of immense service as a means of treating such a condition as chilblains. Dr. Morton writes as a worker to workers, and his book shows in places a certain hastiness, not so far as his facts are concerned, but in the matter of style. We are still awaiting a book on this subject which shall be pleasant to read as well as to refer to, and which shall **not** be disfigured by awkward phrases and halting punctuation.

MALARIA.

A Practical Study of Malaria, by WILLIAM H. DEADERICK, M.D., is a book above the average.[8] It is necessarily, to a large extent, an old story, but it is told in a clear and easy style so that the matter is easily comprehended. The general tone of the work is excellent, save that what "the author calls the parthenogenetic cycle" of the malaria parasite—a cycle, by the way, which is by no means definitely proved—seems to excite much as a red rag angers a bull; for example, on page 114 he describes this phase in the following language; "The parthenogenetic cycle, or reproduction by unfertilized gametes; the cycle of chronic malaria, of latency and relapses, an immaculate conception yielding saviours to the species necessary for its salvation at a time of crisis, a vicarious atonement of macrogametes that the human cycle may be saved"; and yet again, on page 283, referring to the same thing, he writes: "The conquest of the schizonts seems to be a signal for the macrogametes to lay aside the conventionality of slow sexual reproduction and to conscript recruits rapidly by parthenogenesis." Leaving out of account these blemishes, there are points of real interest in the book. For example, the statement as to the comparative frequency of blackwater fever in America is important, and still more so the histories of the sixteen cases in which the urine was carefully examined afterwards. Nephritis is not usually supposed to occur as a sequela, but these statistics show that it may. In the part on the geographical distribution of the disease the author makes a few slips; he states, for instance, that of the lesser Antilles, St. Vincent, Antigua, and Barbados are relatively exempt from malaria; but the two former islands are highly malarial; the last has no malaria, *Anopheles* mosquitos being absent from it. It is hardly correct, either, to say that the greatest prevalence of the disease in St. Lucia is in the cool season from January to March. The views of different authorities on points of controversy are very fairly put forward, and a first-rate bibliography concludes a work which shows painstaking zeal in the review of the literature of the disease and also many signs of original and careful work.

The first fascicule of a treatise on exotic pathology, clinical and therapeutical, published in parts under the direction of GRALL and CLARAC,[9] is entitled *Paludisme*. Six other parts, dealing with different problems in tropical medicine, are promised. Whether such a work is demanded by the French profession it is not for us to say, but this first part is written by Drs. Grall and Marchoux, and their names ensure that the subject will be well and accurately treated. It is a bulky volume of 565 pages, and in the text are 140 figures, diagrams, and charts. With so much space at disposal the authors have room to expand their ideas. This is not always an unmixed advantage, the essential facts often being buried in a mass of useless generalities; and though we do not say that the fault is prominent in this volume, yet there is a tendency in this direction: the value of the book suffers thereby. In every chapter there is much to interest, and much also that is instructive and useful. The account of the pathological anatomy is, for example, distinctly good and well written, and the same may be said for the description of the clinical types of the disease. The retention of the term "typho-malaria" is, perhaps, a mistake, although it must be admitted that cases occur which, even with all our modern methods of investigation, are extremely difficult to diagnose. The cardiac, bronchopneumonic, pneumonic, and pleuritic forms, rare varieties not usually described in ordinary textbooks, are all well dealt with, and the same may be said of the dysenteric and other algid types. The section on treatment occupies just over fifty pages, and here compression would have been an improvement. A chapter on antimalarial legislation, which completes the volume, contains good accounts of this new branch of sanitary science as at work in Italy, India, Algiers, and other places.

Captain CRAIG, of the Medical Corps of the U. S. Army, has had the fortune to study malaria in different parts of the tropics and in America. He has built these experiences into a book—*The Malarial Fevers, Haemoglobinuric Fever, and the Blood Protozoa of Man*.[10] It is a good book, and contains much useful information well put together; but as malaria is a subject about which a great deal has been written during the last ten years, the volume should not contain such a number of faults here. On page 7 we read: "Ross continued his observations upon

[7] *Essentials of Medical Electricity and Radiography*. By E. Reginald Morton, M.D., F.R.C.S.Edin. Second edition. Kimpton's Essential Series. London: Henry Kimpton. 1910. (Cr. 8vo, pp. 365, 129 illustrations, plates 11. 6s.)

[8] *A Practical Study of Malaria*. By William H. Deaderick, M.D. Philadelphia and London: W. B. Saunders Company. 1909. (Roy. 8vo, pp. 500, illustrations 100. 20s.)

[9] *Traité de pathologie exotique, clinique, et thérapeutique*. Publié en fascicules sons la direction de MM. Ch. Grall et A. Clarac. I, Paludisme. Par Ch. Grall et E. Marchoux. Paris: J. B. Baillière et Fils. 1910. (Sup. roy. 8vo, pp. 565; 140 figs. Fr. 12.)

[10] *The Malarial Fevers, Haemoglobinuria Fever, and the Blood Protozoa of Man*. By Charles F. Craig, M.D., Captain, Medical Corps, U. S. Army, Attending Surgeon, New York City. Illustrated by 4 coloured plates, 25 clinical charts, and 28 photomicrographs and drawings. London: J. and A. Churchill. 1909. (Roy. 8vo, pp. 489. 20s.

birds infected with *halteridium*," whereas the correct term is *proteosoma*. On page 41 the sentence: "2. The cytoplasm in the male gamete, etc.," is manifestly wrong; a correct description of the protoplasm of the gametes is, however, to be found on page 46. On page 71 it is said that "*M. rosii* has been proved incapable of transmitting malaria." This appears to be true under natural conditions, but experimentally this mosquito has been infected with malaria. On page 97 no mention is made of Gray and Low's paper (BRITISH MEDICAL JOURNAL, January 25th, 1902), in which Koch's statement that the adult native does not get malaria was first controverted. Pages 135 and 139 contain contradictory statements. On the first the endothelial cells of the liver and the cells of Kupfer are described as containing malarial pigment; this is correct, but on the second it is stated that "this pigment (referring to melanin) is engulfed by the large mononuclear leucocytes—but not by the endothelial cells of the liver or by Kupfer's cells in the liver." On page 313 the author talks of Wright's stain; this should be Wright's modification of Romanowsky's stain, or, to be perfectly correct, Wright's modification of Leishman's modification of Romanowsky's stain. No reference is made to Leishman's original paper (BRITISH MEDICAL JOURNAL, September 21st, 1901) in the literature of this section (page 340), and certainly, from reading page 313, no one not thoroughly acquainted with the subject would gather that Leishman invented this modification and that Wright modified the way of making the methylene blue polychrome advised by the former. It would have been better if the author had stopped when he finished malaria. The chapter on blackwater fever falls much below the standard of the first part of the work, and we are tempted to ask two questions—first, In what regions free from malaria is blackwater fever found? and secondly, How the author knows that the patients, in whom it has been said that no symptoms of malaria occurred, had not that disease in the latent form on which he himself lays so much stress? Repetitions increase the size of the book without adding to its usefulness.

CHOLELITHIASIS.

THE monograph on cholelithiasis by Professor ASCHOFF and Dr. BACMEISTER[11] is one of the most important contributions to the study of the mode of production of gall stones since the celebrated work of Naunyn. It is destined probably to modify to some extent the conclusions generally accepted by the profession on the authority of Naunyn, who taught that bile stasis in the gall bladder, however caused, always sets up an infective catarrh, and that this infection was essential to the precipitation of cholesterin. This view has been criticized by Hirsch and Lichtwitz on chemical grounds, but Aschoff and Bacmeister point out that there is an essential difference in the composition of solitary and of multiple gall stones. The former are composed of pure cholesterin around a nucleus of pigment, the cholesterin being arranged in radiating rods which can be well seen in a polished section; they show no lamination except that there may be a secondary deposit of a mantle of lime salts around the primary pure cholesterin stone. This radiating stone is to be found in non-infected gall bladders, and arises independently of inflammation. On the other hand, multiple stones are, as Naunyn described, composed of cholesterin, lime salts, and pigment mixed together, and show on section a laminated structure. They are always caused by inflammation and are secondary to infection. The presence of a pure cholesterin stone predisposes a gall bladder to infection, so that a pure, non-infective cholesterin stone may be the cause of a number of mixed stones, and may in the same way acquire a mantle or outer layer of mixed mineral deposit; as such solitary stones are often impacted in the neck of the gall bladder, this mantle may exist only as a cap over the upper part of the stone. They have found by experiment that cholesterin may be obtained from bile free from epithelium, so that the catarrhal desquamation of the epithelial lining of the gall bladder which Naunyn regarded as essential is really not so. They also differ from him in regarding the presence of cholesterin as constant and as dependent on metabolic processes. For example, it is increased by the use of protein food, and is absorbed from the bowel and secreted by the liver; they believe it may crystallize in the gall bladder from a process of sterile autochthonous destruction of the bile. There is, however, a physiological shedding of the epithelium in the gall bladder which is increased by stasis.

They have not been able to settle the exact nature of the chemical decomposition by which the precipitation of cholesterin takes place. The pigment and the traces of lime to be found in these radiating stones are also present in normal bile. Stasis from any cause favours infection from the gall bladder, and this may be brought about mechanically, as by improper clothing, which probably accounts for the greater frequency of gall stones in women. Such stasis favours infection, as has been already noted, but infection may also occur in consequence of many acute infectious diseases or from the presence of an aseptic foreign body. They hold that dropsy of the gall bladder is not a purely mechanical process, but always of inflammatory origin and to be regarded as a process of cure. Their work is based upon the study of a very large amount of material obtained from the surgical clinics of Kehr, Kuettner, Enderlen, Kroenig, and Kraske; they have studied the inflammatory changes in 250 gall bladders excised by operation and fixed forthwith, but as a rule they have been opened; they also obtained 50 from dead bodies unopened. They found cancer and gall stones associated in 9 cases; in 2 the stone was radiating; hence it may be regarded as the primary condition and the cancer as the secondary. In 5 the stones were of the mixed kind, and it was as probable that the cancer was secondary as that it was primary; in 2 cases of cancer no stones were found. They state that cancer may supervene on a congenital adenomatous formation in the gall bladder. This is a work which should be studied by every pathologist and clinical teacher. It is illustrated by eighteen beautifully executed chromolithographic plates and by numerous figures in the text, reproducing photographs or photomicrographs. The volume contains a carefully compiled bibliography of its subject matter.

VENEREAL DISEASES.

IN the atlas of syphilis and venereal diseases,[12] by the late Professor MRACEK of Vienna, a good account of the subject is given. In addition to genital chancres, there are some instructive plates of extragenital chancres. Considering the attitude of some teachers in this country as to the great rarity of primary sores of the cervix uteri, the plate illustrating them is well worthy of study. Where women are examined more systematically than with us chancre of the cervix is not rarely observed. It is overlooked, and this accounts for errors which would be avoided were a speculum employed. The nomenclature which obtains among German writers, however, should not be imitated. For instance, "psoriasis syphilitica plantaris" for plantar syphilides (Plate 30) is misleading, and by modern English writers has been rightly given up. Further on we find "psoriasis palmaris" (Plate 30, *a*), "leukoplakia (psoriasis) linguae" (Plate 42, *b*). The same remarks apply to "papulae diphtheriticae in mucosa portionis vaginalis et vaginae" (Plate 39), and "papulae diph. in mucosa lab. sup. or. et in bucc. sin." (Plate 40). The text on the pathology and treatment is succinct and satisfactory for an atlas of reference such as this. The illustrations are, on the whole, very fair. The atlas will be found useful.

Dr. MAGIAN'S small *Handbook of Venereal Diseases*,[13] in the compilation of which the author states that almost every modern authority has been freely consulted, will be useful within certain limits. The section on gonorrhoea contains a judiciously arranged summary of symptomatology and treatment, and is more satisfactory than that on syphilis, a good deal of which consists of little more than an enumeration of signs and symptoms, and, consequently, the information given is too scanty to be of much value. For example, the description of syphilis of the bones, the

[11] *Die Cholelithiasis.* Von L. Aschoff und A. Bacmeister. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 125, Taf. 18, Abb. 18. M.20.)

[12] *Atlas der Syphilis und der venerischen Krankheiten, mit einem Grundriss der Pathologie und Therapie derselben.* Von Professor Dr. Franz Mracek. Second edition. Munich: J. F. Lehmann. 1908. (Cr. 8vo, pp. 230; 81 coloured plates and 26 illustrations. M.16.)

[13] *A Handbook of Venereal Diseases.* By A. C. Magian, M.D., B.Ch.Vict. Manchester and London: John Heywood, Limited. 1909. (Cr. 8vo, pp. 159. 3s. 6d.)

tendons, the eye, and the ear, occupies only a single page, and the reader who sought for guidance as to the diagnosis of a syphilitic affection of, say, the nervous system or of the bones, would probably feel disappointed. The chapter on treatment is better, and so are those on inherited syphilis and syphilis and marriage. On the other hand, there are some Biblical quotations which might very well have been left out. The statement that "a venereal disorder . . . is so very seldom contracted in any other way than that of prostitution or illicit intercourse, that other causes may be almost neglected," is somewhat misleading as far as syphilis is concerned.

THE PHYSIOLOGY OF MASSAGE.

IN this little book on the scientific basis of massage,[14] Dr. CARL ROSENTHAL, who has already published other works on the subject, seeks, by explaining its physiological basis, to remove what he regards as the prejudice entertained by so many medical practitioners against a method which is largely in the hands of unqualified persons. Although massage has been practised empirically from ancient times, it is only during the last thirty or forty years that any attempt has been made to study it scientifically and give a rational explanation of the results. The author names Mosengeil (1876) as the first to carry out and publish physiological experiments on animals in elucidation of its action. He has been followed by O. Lassar, J. Zabludowski, Eccles, Kleen, J. Mitchell, and others. In the chapters of this book Dr. Rosenthal relates the experimental evidence obtained in some cases from animals, in others from human subjects to show the action of massage on the surface temperature, the electrical resistance of the skin, the common sensibility of the skin and its sensitiveness to pain; the action of massage on the subcutaneous fat he found, in accordance with other observers, to be directly *nil*. Indirectly, he thinks its influence may be great by increasing metabolism, circulation, and diuresis; muscular energy is increased in tired as well as in fresh muscles, while by massage tired muscles are restored more quickly than by rest, and the tendency to cramp is diminished. It promotes the circulation of blood and lymph in the extremities, while it withdraws these fluids from the abdomen. It makes the heart's action slower and the pulse fuller and stronger, and it diminishes the area of the cardiac dullness. It causes, he believes, an increase both of the red cells and of the leucocytes, but especially the latter, which he explains as an apparent increase from their being forced into the blood stream. He discussed the general effect of massage upon metabolism, diuresis, nutrition, blood pressure, the circulation, and respiration, which are all promoted by its use. With regard to the alleged effect in diminishing the excretion of sugar in diabetes, he quotes the favourable experiments of Finkler and the criticisms of Seichter, who was unable to confirm Finkler's favourable results. Undoubtedly massage is beneficial to the general health and nutrition of diabetics, but it has not been proved to have any influence upon the excretion of sugar.

NOTES ON BOOKS.

IT would be decidedly difficult to mention the number of textbooks of zoology, botany, and biology which have appeared in England in the last few years, yet another volume is added to the list, *An Introduction to the Study of Biology*, by the Misses KIRKALDY and DRUMMOND.[15] A textbook almost invariably commences in the preface with an apology or a justification for its appearance, and in the present case one justification put forward is that the frog is too specialized an animal to be used as the type of vertebrate anatomy. The dogfish is therefore given the place of honour in the book, but the frog is included "to show the adjustment of an aquatic form to a terrestrial habit." This is, perhaps, a new idea, but is it a justification for bringing out a new book which is a mixture of zoology and botany and which leaves out such types as the snail and the pigeon? The book seems unsatisfactory, partly owing to the incompleteness of the types and partly to the insertion of chapters upon "allies" of this or that type, the term "ally" being used in its very broadest sense. For instance, the malaria mosquito and gnats are described at some length in a chapter on the "Crayfish and its Allies." The book is apparently produced to provide for a particular examination since the preface tells us that "the organisms dealt with are those prescribed in the syllabus of the Oxford and Cambridge Schools Examination Board, with certain additions designed to bridge over the gulfs produced by too close an adherence to the type system." In days gone by the idea of an examination was to test the knowledge of the candidate, but the fact that for nearly every syllabus a cram book can be found has largely assisted in reducing the examination system to a test of the cramming or crammable capacity of the student.

In a volume which they have entitled *Clinical Memoranda for General Practitioners*,[16] Drs. BRAND and KEITH have collected a series of short and desultory annotations on a wide variety of subjects more or less important to men in practice. Many of the memoranda are too sketchy to be of much practical use, and convey information which is mere common knowledge such as is available in every good treatise on clinical medicine as well as in the periodical literature of the profession. Others are more valuable, and deal with subjects which are not so generally understood. A smattering of knowledge is proverbially a dangerous thing, and any attempt to convey accurate information within the compass of a few lines on such comprehensive subjects as "digitalis in acute endocarditis," "rheumatism in children," "diarrhoea," "phlebitis and thrombosis"—to mention only a few examples chosen at random—seems a direct encouragement to the worst of all clinical sins, the establishment of a diagnosis or the institution of a plan of treatment on a few isolated facts. It is incontestable that without patient and detailed investigation no illness can be thoroughly understood, and however useful aphorisms and short references may be as concentrated essences of large generalizations, they possess a very limited application to the needs of those who desire their work to be thorough and their conclusions to be established upon the firm basis of personal investigation. The book is divided into four sections—medical, surgical, obstetrical and gynaecological, and therapeutic—and concludes with a series of short statements called aphorisms, some of which are apt enough. The book contains much that is of interest, and reflects careful observation and considerable bibliographic research on the part of its authors. In many paragraphs it directs attention to points in diagnosis and treatment which are not sufficiently emphasized in the education of the student, and herein will be found its chief value. It is pleasantly written and has an excellent and comprehensive index, which makes reference to the various memoranda easy.

DR. GEORGE HERSCHELL, in the second edition of his booklet on soured milk,[17] discusses auto-intoxication from intestinal putrefaction and the selection and preparation of lactic acid ferments, and finally gives an account of their administration in disease, illustrated by cases treated by himself. The style of the work leaves the reader in some doubt as to what class of audience the author has in mind. He is strongly opposed to the use of any sour milk except that prepared by a competent bacteriologist, or at home according to the rules laid down in this book. It is essential, of course, that when administered therapeutically the bacteriological contents of sour milk should be precisely of the kind desired and the approximate number and activity of the micro-organisms present known to the medical men. But it is not made clear why it should be deemed so objectionable for persons in this country to consume soured milk on their own account. After all, soured milk is a pleasant form of food, and as sold by dairy companies or commonly prepared in the household must be at least as safe a diet as the corresponding article prepared by villagers in the Middle East.

We have received vol. i of the four volumes annually published under the title of *International Clinics*.[18] It contains summaries of the progress of therapeutics, medicine, and surgery during the year 1909, and some

[14] *Die Massage und ihre wissenschaftliche Begründung.* Von Dr. med. Carl Rosenthal. Berlin: August Hirschwald. 1910. (Sup. roy. 8vo, pp. 152. M. 3.60.)

[15] *An Introduction to the Study of Biology.* By J. W. Kirkaldy and I. M. Drummond. Oxford: Clarendon Press. 1909. (Cr. 8vo, pp. 266, illustrated. 6s. 6d.)

[16] *Clinical Memoranda for General Practitioners.* By Alexander Theodore Brand, M.D., C.M., and John Robert Keith, M.D., C.M. London: Baillière, Tindall, and Cox. 1909. (Crown 8vo, pp. 215. 3s. 6d.)

[17] *Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease.* By George Herschell, M.D. Second Edition. London: Henry J. Glaisher. (Pp. 72.)

[18] *International Clinics.* Edited by Henry W. Cattell, M.A., M.D., with the collaboration of various authorities. Vol. i. Twentieth series. 1910. Philadelphia and London: J. B. Lippincott Company. (Pp. 301. Price 35s. net.)

sixteen more or less elaborate papers on various subjects. Three deal with the serum diagnosis of syphilis, and two others with pellagra and its diagnosis and treatment. A fair number of papers are illustrated by coloured engravings, the authors, with one exception, being American physicians and surgeons bearing more or less familiar names.

The twenty-first volume of the *Transactions of the American Pediatric Society*,[19] edited by Dr. L. E. LA FÉTRA, contains an account of the proceedings of the Society at it annual meeting in 1909. Included are some twenty papers, abstracts of the observations made by speakers who subsequently discussed them being added. A considerable proportion are records of single cases, one of the most interesting of these being a case of so-called congenital malaria. The other papers include an account of seven cases of thymus death in one family, a summary of the results of an analysis of the examination of the urine in 300 cases of gastro-intestinal disease in infants, and a consideration by Dr. L. Emmett Holt of the bacteriology of acute infections of the respiratory tract in children. In this some attempt is made to determine how far cultural methods are reliable in the differential diagnosis of influenza. Also of some general interest is Dr. Rotch's attempt to determine what part this Pediatric Society might usefully play in the settlement of public questions. The president at the meeting was Dr. C. P. Putnam, from the summary of whose paper it may be gathered that in Boston barrack homes for children are making way for the boarding-out system.

The new edition of the *Charities Register and Digest*,[20] which has now appeared, is the nineteenth issue, and, like its predecessors, edited by Mr. C. S. LOCH, of the Charity Organization Society. It contains a classified list of all charities in or available for the metropolis, a digest of information respecting all means available for the prevention or relief of distress among the poor, a review of last year's work in the world of charity, and special articles on various comparatively novel forms of philanthropic enterprise, each written by a person having expert knowledge thereof. It is in all respects a most admirable publication, always kept thoroughly up to date, and made easy to use by one of the largest and best indices with which we are acquainted. The notes regarding individual institutions show their precise scope, and supply enough information respecting what they are doing to decide in most cases their true status. The introductory matter, which occupies a fourth of the whole number of pages, is a ready guide to the fashion in which any given case of distress, from whatever cause, may best be assisted. It is practically a treatise on methods of combating difficulties arising in civilized communities, but in addition describes under separate headings the whole organization of London for the relief of sickness or physical or mental suffering, and for dealing with poverty and its various outcomes. One of the subjects treated with additional fullness this year is unemployment, and another emigration.

Possibly the term "applied therapeutics" best describes the conception underlying the French title of Professor GRASSET's handbook of treatment.[21] In the sixth edition which has now appeared there is no departure from the original plan of the work. This is first to give in alphabetical order brief descriptions of the principal concrete diseases, and more definitely recognized disorders and of their clinical symptoms, and then describe in precise terms the treatment which should be adopted, including diet and prescriptions for any drugs which may be ordered. The new edition, which, unlike many French books, is beautifully bound, has been prepared by Dr. VEDEL of Montpellier, and its contents only differ from those of its predecessors in being brought into line with the French codex of 1908 and in including suitable allusions to the most recent forms of treatment. It is naturally a popular work in France, for it enables practitioners to do with very little trouble what is always expected of them by their patients—namely, to provide them in writing with full instructions on all points. It is possible that the same practice might be followed with advantage more commonly, and those desirous of trying it might gain useful hints, perhaps, from this book.

[19] *Transactions of the Pediatric Society.* Volume xxi. 1910. New York: E. B. Treat and Co. (Pp. 207.)
[20] *The Annual Charities Register and Digest.* By C. S. Loch. Nineteenth edition. London: Longmans, Green and Co. 1910. (Pp. ccclxii+668. 5s.)
[21] *Consultations médicales.* Sixième edition. Par le Professeur Grasset et Dr. Vedel. Montpellier: Coulet et Fils. (Cr. 8vo, pp. 535.)

THE

COMPOSITION OF SOME PROPRIETARY FOOD PREPARATIONS.

VII.—BREAKFAST AND GENERAL FOODS.

THE number of proprietary foods which must be classed as "general," being recommended by the makers for general consumption by healthy people, and in most cases by invalids also, is very large, and it would not be practicable to deal with more than a selection from among them; those described below are believed to include most of these foods having the largest sale, and to be fairly representative of others.

In most cases some information is given as to the materials from which the food is prepared, and in a few cases the percentage of some of the chief constituents is set forth. The real value of a food does not, of course, depend solely on its percentage composition; different fats and different proteins vary greatly in their adaptability for assimilation; but a knowledge of the proportions of these constituents is nevertheless of value, and enables useful comparisons to be drawn. In the results given below the figures for carbohydrate are obtained by difference; the Calorie values are calculated from the percentage composition, and represent the Calories (kilocalories) yielded by complete combustion of 1 gram of each food. For purposes of comparison the Calorie values of a few common foods are here given (from Dr. R. Hutchison's *Food and the Principles of Dietetics*):

Potatoes	0.98
Lean beef	0.98
Cheese	2.4
Fine white bread	2.74
Wholemeal bread	2.78
Coarse white bread	3.03
Fat beef...	3.27
Peas	3.31
Bacon	8.86

EMPROTE.

(EUSTACE MILES PROTEID FOOD.)

This is supplied by Eustace Miles Proteid Foods, Limited, London, W.C. A package, price 1s. 6d., contained 1 lb. The food is described on the label as

A pleasant and sustaining powder, with tonic properties. It has proved an excellent remedy for nervous weakness, sleeplessness, sea-sickness, gastritis, etc. It can be used as a drink or food by the healthy, as well as by invalids and children, and can be safely taken after an operation.

The directions are:

For a complete meal, three to four heaped tablespoonfuls of the "Emprote" in a breakfast cup, are found sufficient by most people. Slowly add the hot water and mix thoroughly.

Analysis showed it to contain:

Protein	30.5 per cent.
Fat	5.3 ,,
Water	9.8 ,,
Ash	6.2 ,,
Carbohydrate, by difference ...	48.2 ,,

Calorie value, 3.72

Microscopical examination showed the presence of potato starch in fairly considerable quantity. A cold water extract of the food had a strong reducing action on Fehling's solution, indicating the presence of a sugar other than cane sugar. The ash contained a considerable proportion of phosphate.

EUSTACE MILES BREAKFAST FOOD.

This is supplied by the same firm as the above. A sixpenny package contained $\frac{1}{2}$ lb.

This is described on the label as:

The ideal food for breakfast. Ready for immediate use with cold milk or cream added.

Analysis showed it to contain:

Protein	15.7 per cent.
Fat	3.7 ,,
Water	10.1 ,,
Ash	3.6 ,,
Carbohydrate, by difference ...	66.9 ,,

Calorie value, 3.73

The material was light brown in colour and coherent in small cylindrical masses, slightly sweet to the taste. A reducing sugar was shown to be present by its action on

Fehling's solution; microscopical examination of the insoluble part showed it to consist principally of wheat flour.

Grape Nuts.

This preparation is supplied by Grape-Nuts Company, Limited, and is made in U.S.A.

A sevenpenny packet contained about 18 oz. This is described on the package as

fully-cooked, pre-digested breakfast food, made by Special Treatment of Entire Wheat and Barley. A food for Brain and Nerve centres.

The directions are:

Serve dry, just as it comes from packet. Perfect results are obtained by the use of four heaping teaspoons for the cereal part of a meal. Never use more.

Analysis showed it to contain:

Protein	11.2 per cent.
Fat	0.6 ,,
Water	5.1 ,,
Ash	2.0 ,,
Carbohydrate, by difference	81.1 ,,

Calorie value, 3.84

Much of the carbohydrate was in a soluble form, and consisted of gelatinized starch and a reducing sugar. Microscopical examination of the insoluble portion indicated wheat and barley flours as the constituents. The material was in irregular masses of brown colour and agreeable, somewhat malty, flavour.

Avenola.

This preparation is supplied by the "International Health Association, Ltd.," of Watford.

A sevenpenny packet contained a little over 1 lb. This is described on the label as

A perfectly cooked food. A combination of various grains. Ready for use in one minute.

It is further stated that

The best and most digestible way of eating Avenola is to take it dry, after making hot in an oven. Avenola in milk or cream is most toothsome.

Analysis showed it to contain:

Protein	12.3 per cent.
Fat	2.6 ,,
Water	6.4 ,,
Ash	1.8 ,,
Carbohydrate, by difference	76.9 ,,

Calorie value, 3.92

This material was in pale coherent masses, with little taste. Microscopical examination showed a mixture of starches, more or less changed by heat.

H.O.

Hornby's steam-cooked oatmeal. This is supplied by the H.O. Company, described as of New York, U.S.A.

A sixpenny packet contained nearly 2 lb. This is a form of rolled oats. It is directed to be made into a porridge by boiling with water for from ten to fifteen minutes. An "analysis" is printed on the package, showing: Carbohydrates 65.05, nitrogenous matter 17.63, vegetable fats 7.38, phosphates 3.53, and water 6.41.

Analysis showed it to contain:

Protein	14.4 per cent.
Fat	5.8 ,,
Water	9.6 ,,
Ash	1.6 ,,
Carbohydrate, by difference	68.6 ,,

Calorie value, 3.94

Hygiama.

This preparation is supplied by Theinhardt's Food Company, Limited, of London, E.C.

A shilling tin contained about 4½ oz. The colour and flavour show this to be a cocoa preparation, and a small proportion of the nitrogen is therefore present in other forms than protein. It is stated on the label that

Hygiama is a nutritious substance which has been known since 1890 and which has during this time given the most excellent results both in hospitals and in general practice. Hygiama combines all the nutritious matters necessary for the preservation and growth of the organism. It is therefore a perfect food.

The directions are to mix two large teaspoonfuls with half a pint of milk and boil; for children, one large teaspoonful to half a pint of milk.

Analysis showed it to contain:

Protein (calculated from total nitrogen)	21.7 per cent.
Fat	8.9 ,,
Water	4.1 ,,
Ash	3.6 ,,
Carbohydrate, by difference	61.7 ,,

Calorie value, 4.25

The carbohydrate comprised both starch and a reducing sugar.

Stamina Food.

This is supplied by the Wallace "P. R." Bakery, of London, S.W.

A ninepenny tin contained about 1 lb. This food is described on the label as

A perfectly balanced food, containing all the essential elements, rightly proportioned, to sustain the body in vigorous health.

The directions for preparing a breakfast food are:

One part of Stamina to four parts of milk or water. Dredge into boiling liquid, and cook for five minutes more.

Analysis showed it to contain:

Protein	10.8 per cent.
Fat	1.4 ,,
Water	9.7 ,,
Ash	1.1 ,,
Carbohydrate, by difference	77.0 ,,

Calorie value, 3.73

Microscopical examination showed this to consist chiefly, if not entirely, of wheat flour. It was, however, in much coarser powder than ordinary flour, and of a greyish tint. The composition of an average wheat flour of good quality is about as follows:

Protein	10.8 per cent.
Fat	1.1 ,,
Water	12.8 ,,
Ash	0.5 ,,
Carbohydrate	74.8 ,,

Calorie value, 3.61

Chapman's Food.

(Entire Wheat Flour.)

This flour is supplied by Chapman's Food Company, of Christchurch, Hants.

A shilling tin contained about 1 lb. It is stated in a pamphlet that this food

Contains all the elementary principles of true food, and by its use children and invalids take in the largest percentage of flesh forming nutriment with the least expenditure of vital force.

It is described as roasted wheat flour, and is directed to be prepared for use by mixing with milk and water and boiling.

Analysis showed it to contain:

Protein	10.1 per cent.
Fat	1.5 ,,
Water	7.6 ,,
Ash	1.2 ,,
Carbohydrate, by difference	79.6 ,,

Calorie value, 3.82

Cheltine Food.

Supplied by Worth's Foods Syndicate, Limited, Cheltenham.

A shilling tin contained about 1 lb. This is described on the tin as "a perfect cooked food." The directions are:

One tablespoonful to be mixed with half-a-pint of cold milk, or milk and water, into a thin smooth paste: allow to stand in a warm place for about ten minutes for the digestive action to take place; put into a saucepan and raise to the boiling point. Immediately it reaches the boiling point it is sufficiently cooked. Sweeten it with a little castor sugar to taste, or salt and spice may be used.

Analysis showed it to contain:

Protein	11.4 per cent.
Fat	1.7 ,,
Water	7.1 ,,
Ash	2.1 ,,
Carbohydrate, by difference	77.7 ,,

Calorie value, 3.81

A cold water extract of this preparation contained a little starch, and dextrin; a larger quantity of starch was present which was not gelatinized. A portion of the material did not dissolve in boiling water, and this portion agreed with casein in its characters and behaviour to tests.

DR. ALLINSON'S NATURAL FOOD.

This preparation is supplied by the Natural Food Company, Limited, London, E.

A sixpenny tin contained about 12 oz. It is stated on the label that this food

makes delicious and highly nutritious gruel, puddings, porridge, baby's food.

Various directions are given, according to the purpose for which it is required; they involve mixing it with milk, or milk and water, and bringing the mixture to the boil.

Analysis showed it to contain:

Protein	12.2 per cent.
Fat	2.0 ,,
Water	6.7 ,,
Ash	1.4 ,,
Carbohydrate, by difference ...	77.7 ,,
Calorie value, 3.87	

Microscopical examination showed this to consist chiefly or entirely of wheat flour; the taste indicated that it had undergone some cooking process.

DUBARRY'S REVALENTA ARABICA FOOD.

This is supplied by Dubarry and Co., Limited, London, W. A shilling tin contained about 5 oz. In a circular enclosed in the package this food is stated to be the only cure for a long list of complaints, beginning with dyspepsia and constipation, and including scrofula, consumption, rheumatism, influenza, paralysis, asthma, etc. It is directed to be mixed with cold water, then more water or milk added, and the whole boiled for twenty minutes.

Analysis showed it to contain:

Protein	24.2 per cent.
Fat	0.8 ,,
Water	9.1 ,,
Ash	2.2 ,,
Carbohydrate, by difference ...	63.7 ,,
Calorie value, 3.68	

Microscopical examination showed this to consist of lentil flour, with no indication of any other constituent. This flour is to be bought for a few pence per lb., and its average composition is about as follows:

Protein	22.3 per cent.
Fat	1.1 ,,
Water	12.6 ,,
Ash	2.3 ,,
Carbohydrate	61.7 ,,
Calorie value, 3.55	

GLUTEN MEAL.

This is supplied by the International Health Association, Limited, in packets. A packet, price 10d., contained about 1 lb. This is described on the package as "30% strength." It is also stated that:

Gluten, the nitrogenous and flesh-forming element of wheat, barley, and rye, is the most remarkable of all food elements, in that it alone is capable of sustaining life indefinitely in the absence of all other elements. . . . Gluten can be prepared only by washing out the starch of wheat flour. It is by this laborious and costly process that this product is prepared. This Invaluable Food Preparation is eminently adapted to all cases of feeble nutrition, impoverished blood, general debility, nervous exhaustion, chlorosis, diabetes, and all diseases attended by general weakness. It is also exactly suited for many forms of dyspepsia, as acid dyspepsia, or sour stomach, biliousness, gastric catarrh, flatulence, torpid liver, and many other gastric derangements. In consumption, scrofula, and all wasting diseases, as well as in fevers and in convalescence from any acute diseases, nothing can excel in value this delicate, digestible, and toothsome article of diet.

This certainly appears to convey the statement that the contents of the package consist of either pure gluten, or at least of a mixture containing 30 per cent. of the latter. But analysis showed it to contain:

Protein	15.8 per cent.
Fat	0 6 ,,
Moisture	9.1 ,,
Ash	0.7 ,,
Carbohydrate, by difference ...	73.8 ,,
Calorie value, 3.73	

The carbohydrate consisted chiefly of starch which was gelatinized and therefore soluble in cold water; microscopical examination showed the presence of wheat starch, partly altered by heat.

WINTER'S PRUNUS PERFECT FOOD.

This is supplied by R. Winter, Birmingham.

A shilling tin contained about 10 oz. It is thus described on the label:

R. Winter's Prunus Perfect Food contains about 23 per cent. of pure vegetable albumen, 50 per cent. of digested starch, 20 per cent. of Nut Fat in a perfect state of emulsion, and also valuable vegetable salts. The total percentage of nutriment is about 96. It is an ideal form of nourishment for invalids and infants as well as for the strong and healthy. It is digested with the greatest ease by the most delicate, and is assimilated for the upbuilding of the human body and brain in a marvellously short space of time. Prunus Perfect Food completely supersedes Cod-liver-oil, Beef Tea, Peptonised Food, etc. 1 lb. of Prunus Perfect Food is equal in nourishment to 3 lb. best beef or mutton.

It is directed to be dissolved in hot or cold water, or added to milk.

Analysis showed it to contain:

Protein	17.2 per cent.
Fat	27.6 ,,
Water	6.7 ,,
Ash	2.1 ,,
Carbohydrate, by difference ...	46.4 ,,
Calorie value, 5.17	

On boiling in water, a rather considerable proportion remained undissolved, and this proved to consist of nitrogenous matter. Starch was present in a gelatinized condition, and a reducing sugar.

ROBORAT.

No name or address of makers is given on the package. A ninepenny packet contained about 4 oz.

It is stated on the package that

Roborat consists of unaltered vegetable albumen, and contains, besides this, nutritive salts and a considerable quantity of Lecithin, a natural phosphorus combination which promotes all the higher life processes such as general growth, mental energy, and tissue formation. The nutritive value of ordinary foods is increased many times by the addition of Roborat.

The directions are:

The Dose for adults is from 2 to 3 or more tablespoonfuls a day. For children according to age from 2 to 3 teaspoonfuls a day. Roborat can be taken in its simple form, between wafers, in water or mixed with any kind of food.

Analysis showed it to contain:

Protein	73.0 per cent.
Fat	4.7 ,,
Water	10.0 ,,
Ash	2.9 ,,
Carbohydrate, by difference ...	9.4 ,,
Calorie value, 3.82	

Microscopical examination showed that the carbohydrate consisted of wheat starch.

NUT BROMOSE.

This is supplied by the "International Health Association." It is in the form of small tablets, of a pasty consistence. A tin, price 1s. 6d., contained 30 tablets, weighing a little over one-third of an ounce each. It is stated on the tin that

Bromose is a predigested food. It is especially intended for persons who need an increase of fat and blood, and those who are unable to digest starch, or who become bilious from eating milk or cream. Invaluable for Constipation. Bromose is the most nourishing and fattening of foods.

The directions are:

The amount of benefit derived from Bromose depends upon the quantity eaten. For rapid gain, three to six Tablets should be taken at each meal. Bromose is best eaten dry. It may, however, be eaten in liquid form, as it readily dissolves in hot or cold water.

Analysis showed it to contain:

Protein	21.6 per cent.
Fat	29.7 ,,
Water	11.4 ,,
Ash	1 8 ,,
Carbohydrate, by difference ...	35.5 ,,
Calorie value, 5.10	

Starch was present in fair quantity, and a good deal of a reducing sugar; a considerable proportion did not dissolve in boiling water. Microscopical examination showed the presence of vegetable tissue, the appearance of which agreed with its being derived from nuts.

GRANOSE.

This also is supplied by the International Health Association. A box, price 7½d., contained 19 "biscuits," each weighing rather over half an ounce. These "biscuits" are loose aggregations of flaky material pressed together. It is stated that

Granose consists of the entire kernels of choice wheat, prepared by unique processes so as to afford the most digestible food ever prepared.

Analysis showed it to contain:

Protein	10.9	per cent.
Fat	1.8	,,
Water	9.5	,,
Ash	2.0	,,
Carbohydrate, by difference	75.8	,,

Calorie value, 3.72

MEDICINAL AND DIETETIC PREPARATIONS.

Albulactin.

MUCH of the difficulty of preparing a satisfactory equivalent to human milk from cow's milk arises from the fact that their protein constituents differ widely; analysts are not altogether in agreement as to the relative proportions of casein and albumen in the two milks, but a good estimate gives 6 of casein to 1 of albumen in cow's milk, and about equal amounts of the two in human milk. Mere dilution of cow's milk and addition of cream and milk sugar, therefore, as in the usual preparation of so-called "humanized milk," makes a very imperfect imitation of mother's milk for infants that cannot be breast-fed. The soluble milk albumen called "albulactin," recently introduced by Messrs. A. Wulfing and Co. (12, Chenies Street, London, W.C.), is intended to meet this difficulty. It is described as a soluble salt of lactalbumen, and is intended to be added to diluted milk in the proportion of about 1 to 100, with additional milk sugar. A sample which we have examined was a fine dry powder, readily soluble in water to a slightly cloudy solution; it contained 12.71 per cent. of nitrogen—representing 80.1 per cent. of protein—and 5.22 per cent. of mineral constituents. On addition of acid to the solution, the albumen is precipitated in a finely divided form, and does not form clots. A modified milk, prepared by mixing cow's milk, albulactin, and water in such proportions that the casein and albulactin were in approximately equal amounts, formed much less curd when acidified than diluted cow's milk containing the same proportion of total protein. There appears to be every reason to expect this preparation to prove of great value in the "hand-feeding" of infants.

Standardized Tabloids of Thyroid Gland.

In the therapeutic use of animal glands and preparations made from them great uncertainty as to dose necessarily prevails at first, and when experience has given some guidance as to the amount usually suitable, it is by no means certain or even probable that the glands from different animals will always be equally active. Here, however, as with other drugs, standardization is making progress; galenical preparations of suprarenal gland, for example, have been largely displaced by the use of the definite crystalline active principle. In standardized tabloids of thyroid gland, a sample of which is before us, Messrs. Burroughs, Wellcome and Co. (Snow Hill, London, E.C.) apply the principle of standardization to this substance, which was almost the first of the animal glands to be employed in medicine, and is certainly one of the most widely used. The activity of this gland has been attributed to thyro globulin, an albuminous substance containing iodine; and the percentage of iodine may therefore be expected to be a measure of the activity of a preparation of thyroid, provided the glands have not been subjected to any treatment which would cause alteration in this substance; but this proviso prevents the determination of iodine alone being a sufficient guide as to activity. In the case of these tabloids, which are standardized by chemical tests to contain 0.2 per cent. of iodine, it is stated that the results of the chemical test are controlled by physiological testing, though no particulars are given of the nature of the latter. The preparation appears to mark an advance in accuracy of dosage of the thyroid gland; the tabloids show the careful preparation and good finish characteristic of all the preparations of this firm.

Phosphova.

We have on previous occasions referred to certain of the excellent dry preparations of milk made by Casein, Limited (Battersea, London, S.W.), the manufacturers of "Trumilk" and "Sweet Whey Powder." We have recently had under examination another product submitted by the same firm, to which the name "Phosphova" is given. This is described as a combination of milk, malt and eggs, with sodium glycerophosphate. It is in the form of a dry powder which can be readily mixed with water, and in that form makes an agreeable drink. Our analysis showed it to contain 4.13 per cent. of nitrogen, representing 26 per cent. of protein, and phosphorus equivalent to 2.45 per cent. of anhydrous phosphoric acid, P_2O_5, practically the whole of this being in organic combination; the presence of a small amount of sulphur in organic combination afforded evidence of egg material in its composition. It is stated that the method of desiccation that is employed does not destroy the natural enzymes of the milk, and that it possesses, therefore, the properties of fresh and not of condensed or sterilized milk.

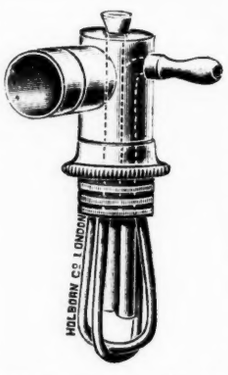
Thiocol "Roche."

When a substance such as guaiacol has proved itself to be of considerable value in the treatment of disease, it is important that it should be presented in a form more suitable for administration and assimilation than that of guaiacol itself. The guaiacol compounds in the form of powder which have been introduced hitherto, while possessing advantages over the parent substance, have not been soluble; the Hoffman-La Roche Chemical Works, Limited (7 and 8, Idol Lane, London, E.C.), now put forward a soluble guaiacol compound under the name "Thiocol." This is supplied in the form of powder, and also as 5 grain tablets, and a sample of the latter has been submitted for our examination. Thiocol is described as the potassium salt of guaiacol sulphate $C_7H_7O_2SO_3K$, containing 52 per cent. of guaiacol; it dissolves readily in water, and the solution gives no precipitate with either acid or alkali, and therefore free guaiacol would presumably not be thrown out in the stomach; the tablets have a fairly strong taste of the parent substance. It is not easy to see what good purpose is served by having the word "Thiocol" stamped on each tablet, and it will certainly militate against the substance being prescribed in this form.

MEDICAL AND SURGICAL APPLIANCES.

A New Ethyl Chloride Inhaler.

MR. P. H. PARSONS (South Kensington) writes: I should like to bring to the notice of medical men who are interested in anaesthetics an angle piece specially designed by me for safety in the administration of ethyl chloride. Hitherto the idea has been to place in a closed bag a certain dose of ethyl chloride and place the face piece over the patient's face and await results, which in too many cases were serious.



May I point out that ethyl chloride is stronger than chloroform, and that any anaesthetist would consider it a criminal act to administer chloroform in a closed inhaler? In the usual way of administering ethyl chloride one is struck by the sudden onset of pallor and the *sudden* widely-dilated pupil, both signs of overdose on the heart, and, of course, both being symptomatic of grave danger. In the angle piece which has been made for me by the Holborn Surgical Instrument Company of Thavies Inn, the new points are: First, a flanged tube running straight through into the bag for the administration of ethyl chloride—there are no valves or stoppers to this, it being intended that the administrator's thumb should act when necessary as a stopper—and secondly, another tube running into the bag to which may be fixed a puff ball attachment, so that at any moment one can dilute the ethyl chloride vapour to any extent. By thus giving dilute ethyl chloride all the dangerous effects can be avoided, and ethyl chloride can be used in perfect safety, and so will regain the important place it should hold for minor surgery.

A MONUMENT to Dr. Crawford W. Long, said to have been the first to use ether as a general anaesthetic, was unveiled at Jefferson, Georgia, on April 21st.

MR. D'ARCY POWER has been elected a corresponding member of the Budapest Royal Society of Medicine—the oldest scientific body in Hungary—in recognition of his services as an honorary secretary of the National Committee for Great Britain and Ireland of the Sixteenth International Medical Congress.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

LONDON, JULY, 1910.

SCIENTIFIC MUSEUMS.

THE BRITISH MUSEUM OF NATURAL HISTORY.

THE British Museum was founded in 1753 by an Act of Parliament which provided "for the purchase of the museum or collection of Sir Hans Sloane and of the Harleian collection of manuscripts, and for providing one general repository for the better reception and more convenient use of the said collections, and of the Cottonian Library and of the additions thereto."

SIR HANS SLOANE.

Sir Hans Sloane, who was President of the Royal College of Physicians of London from 1719 to 1735, and who in 1727 succeeded Sir Isaac Newton in the presidency of the Royal Society, an office he retained until 1741, formed during his long and successful career a large and miscellaneous collection. Sloane was born in 1660, and was a friend of William Courten, a naturalist, who made a very large collection which, in about 1684, he displayed in a set of rooms in the Temple. At his death in 1702 Sloane acquired the whole collection. In 1742 it was, together with the numerous objects he had himself brought together, transferred to the Manor House at Chelsea. Sloane had purchased the manor of Chelsea in 1712, and in 1721 had founded, for the Society of Apothecaries, the botanic garden there. At the time of his death in January, 1753, the collection at the Manor House, Chelsea, consisted of "Books, manuscripts, prints, medals, and coins ancient and modern, seals, cameos and intaglios, precious stones, agates, jaspers, vessels of agate and jasper, crystals, mathematical instruments, drawings, and pictures." It included numerous zoological and geological specimens, as well as an extensive herbarium of dried plants, the greater part of which had probably been formed by Courten; this herbarium is still preserved. The Act of 1753 provided that the sum of £20,000 should be paid to Sloane's family, according to the terms of his will, although his collection is said to have cost him over £50,000.

The Act also appointed trustees who in 1754 purchased Montagu House, Bloomsbury, to which the several collections mentioned above were removed. The museum, henceforth called the British Museum, was opened on January 15th, 1759, but could at first only be visited in specially conducted parties of ten persons during three hours in the day. In 1810 it was made freely accessible to the general public for three days in the week from 10 to 4, but it was not until 1879 that it was opened to the public every week-day from 10 to 6, and on Sunday afternoons. In 1845 the classical building by Sir Robert Smirke, with which most people are familiar, was completed, and in 1857 the great circular reading room was erected.

The increased amount of space afforded by the new building soon, however, proved insufficient for the rapidly growing collection, and in January, 1860, the trustees resolved that it was expedient to remove the natural history collection from the British Museum in Bloomsbury; three years later the purchase of a part of the site of the International Exhibition at South Kensington, with a view of appropriating it to the purpose of a museum of natural history was sanctioned by the House of Commons. The first architect appointed was Captain Francis Fowke, R.E., but he died in 1865, and the late Mr. Alfred Waterhouse, who was appointed in his place, found it necessary entirely to remodel his plans; he retained Captain Fowke's suggestion to use terra-cotta, and the museum is, we believe, still the largest modern building in which that material has been exclusively used in external façades and interior wall surfaces, including all the varied decorations both inside and out. The work of building was commenced in 1873 and completed in 1880. The arrangement of the departments of geology, mineralogy, and botany occupied the remainder of that year, and these portions were opened to the public in April, 1881. In the following year the cases for the larger collections of the zoological department were sufficiently complete to allow these collections to be exhibited, although it was three years later before all the galleries could be brought into a state fitted for public exhibition. The main front of the museum faces south on Cromwell Road, but the return east and west wings have not yet been erected.

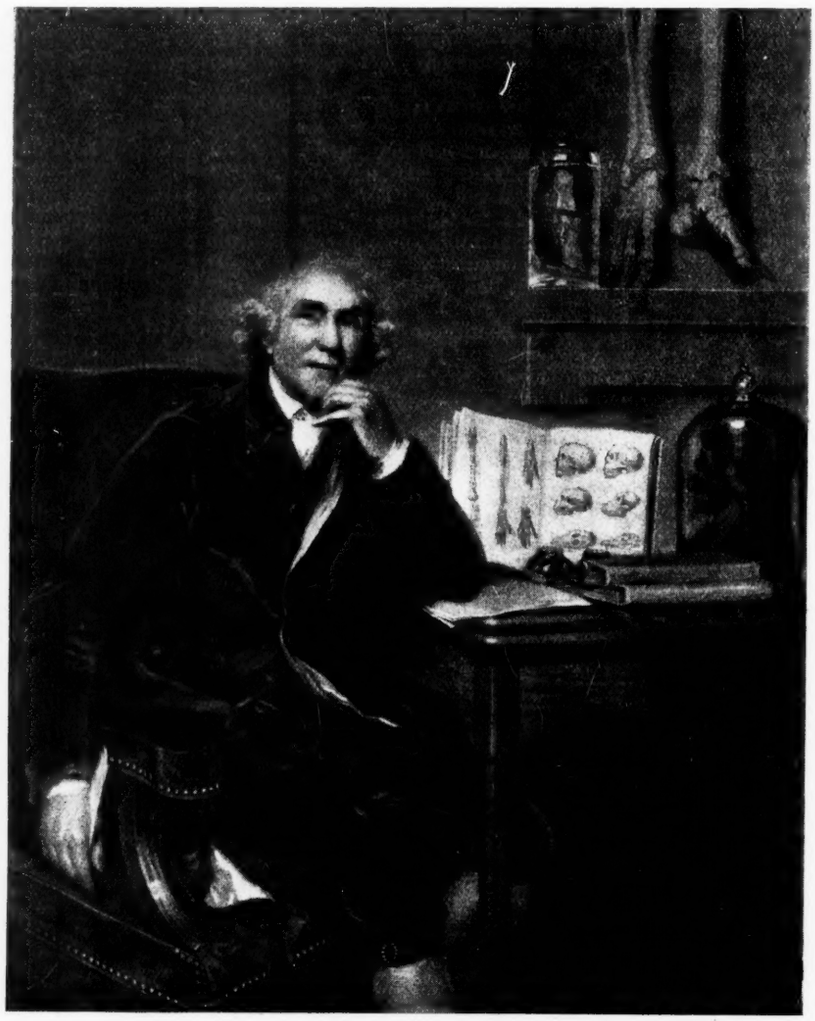
In the centre of the front, which is 675 ft. long, is the main entrance, approached by a flight of steps. Passing across the corridor, the visitor enters the great central hall, where the statue of Sir Richard Owen at the south end faces that of Charles Darwin at the north, while in the bay on the east is the fine seated marble statue of Huxley unveiled ten years ago. In a smaller bay on the west side is a bust of the late Sir W. H. Flower, the first director of the museum. Most of the cases in this hall, which is under the direct supervision of the director, Mr. L. Fletcher, F.R.S., illustrate general laws, or points of interest in natural history, which could not be so appropriately illustrated within the systematic collections of the departmental series. Among the general subjects thus dealt with are variation under domestication as exhibited in pigeons, fowls, and canaries; changes of plumage according to sex and season as shown by ruffs and reeves; seasonal changes of plumage as shown by wild ducks; adaptation of colour to surrounding conditions and the protective resemblance of desert animals to their surroundings; mimicry, albinism and melanism, and intermediate forms in nature; Mendelism. There is also here displayed a most interesting and instructive series of large models of mosquitos and of the tsetse

flies, with still more enlarged models of mammalian blood corpuscles showing the parasites by which they are infested in the diseases communicated by mosquitos and tsetse flies—malaria and sleeping sickness. The five bays on each side of the hall contain the introductory or elementary collection illustrating the more important points in the structure of certain type of animal and plant life. At the north end of the hall is the principal staircase, and behind it the north hall, which contains examples of domesticated mammals.

The west wing contains in its main gallery on the ground floor the collection of birds, and in corridors opening off it those of shells, reptiles, insects, and fishes; on the first and second floor of this wing are the collections of mammals, including man. The whole of the left side of the second floor is devoted to anthropology, and here will be found a most instructive case exhibiting in a striking manner the structural differences distinguishing man-like apes from man, and the different types of human skulls, and methods of measuring them.

The ground floor of the east wing is devoted to the palaeontological collections—the first floor to mineralogy and the second to botany. The departments of zoology, geology, mineralogy, and botany are each supervised by a keeper, a staff of assistant keepers, and assistants.

Besides the exhibits mentioned above, which form the permanent collection, the visitor to the museum next July will have the opportunity of seeing an exhibition which is of exceptional interest and quite unique. It is most unlikely, however, that it will be on view for longer than the present year, so that the opportunity of visiting it should not be lost. We refer to the Exhibition of Memorials of Charles Darwin. The year 1909 was both the hundredth anniversary of Darwin's birth and the fiftieth of the publication of his most famous work, *The Origin of Species*. To celebrate the double event the trustees of the museum gave instructions that an exhibition should be prepared, in which should be shown relics of the great naturalist and specimens illustrative of various themes in his writings. These specimens are contained in nineteen csaes, which have been placed in or adjoining Bays VI to IX on the right hand side of the central hall. Some of the cases are part of the permanent collection, and have already been alluded to—namely, those containing specimens to illustrate variation under domestication, changes of plumage according to sex or season, mimicry, etc. But the remainder contain objects which are for the most part the property of private individuals. The exhibition comprises: (1) Manuscripts, books, and instruments, written or used by Darwin. Perhaps the most interesting of the manuscripts are the statement by Darwin, then a young man of 22, detailing his father's objections to his acceptance of the appointment of naturalist to the *Beagle* expedition, and his uncle Josiah Wedgwood's fateful reply. There are several manuscript notebooks, and three or four microscopes, which nowadays appear humble enough. (2) Portraits, sketches, and medals, amongst which are several portraits of Darwin at different ages. (3) Fossil bones collected by Darwin during the voyage of the *Beagle*. These have been lent by the Royal College of Surgeons. (4) Specimens of barnacles and corals which were the subject of study by Darwin. (5) Various other specimens collected by him or connected with his work. (6) Specimens illustrating not only his discoveries in general, but also actual passages in his published writings, more particularly the *Origin of Species*. References are given to the places in Darwin's books where the subject illustrated is dealt with. To the naturalist these are perhaps the most interesting exhibits. (7) Specimens illustrating Darwin's researches on plants. Every member of the Association who takes even the slightest interest in the problems of evolution—and who does not?—is strongly advised not to miss visiting this exhibition.



Dr. John Hunter.

The museum is open on week days from 10 a.m.; from the middle of July to the end of August it closes at 7 p.m.; on Sundays it is open (from May to August inclusive) from 2.30 p.m. to 7 p.m.

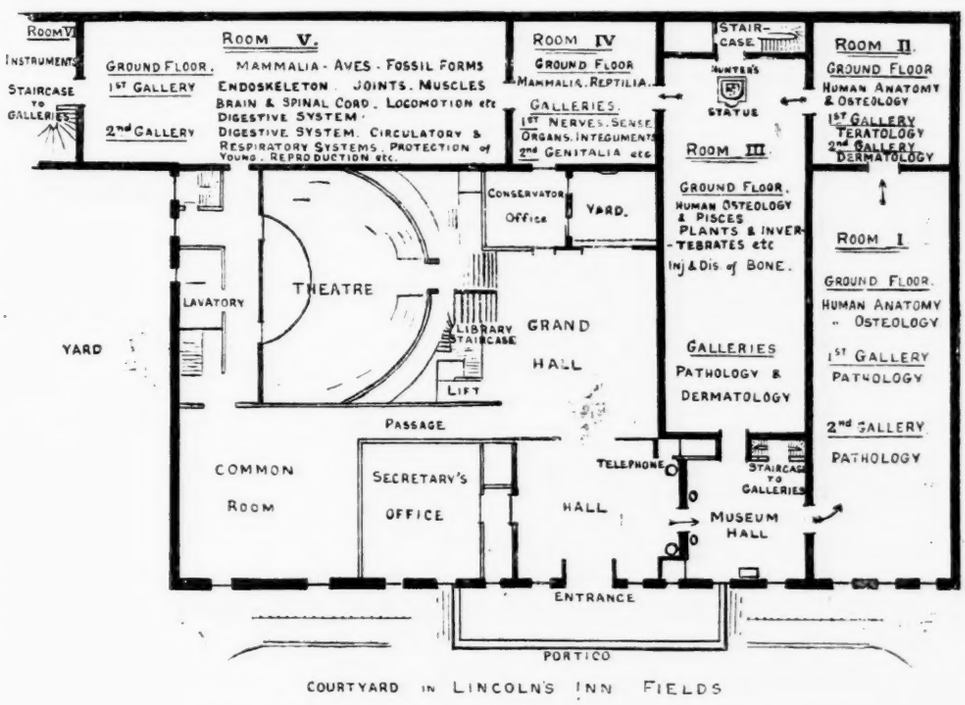
The Museum of the Royal College of Surgeons, England.

Visitors to the museum of the Royal College of Surgeons, in the south side of Lincoln's Inn Fields, W.C., will find that the museum itself, and especially its surroundings, have undergone a considerable alteration since the meeting of the British Medical Association in London fifteen years ago. The slums of Clare Market have been cleared away, and a new great thoroughfare, Kingsway, cut from Holborn to the Strand, gives free and easy access to the south-west corner of the great square in which the museum stands. The means of reaching the museum have been enormously improved; the Holborn Station of the Brompton and Piccadilly Tube Railway is only 300 yards away, so that members of the Association could reach the museum from the meeting rooms at South Kensington in twenty minutes. The Temple Station on the District Railway, and the British Museum Station on the Central London Tube Railway, are also conveniently situated for the museum.

The chief changes in the museum itself relate to the

extension and arrangement of its contents. Just previous to the last meeting of the Association two large rooms—now known as Rooms I and II—had been added to the three older rooms—now marked III, IV, and V. Visitors interested in the history of this museum will recognize in Room III the original museum finished in 1813, to contain the Hunterian Collection, and the room in which the first conservator, William Clift, and his assistant, Richard Owen, carried out their arduous labour under the critical eyes of Home, Blizard, Abernethy, Astley Cooper, and other famous surgeons of that period. Room IV was added in 1836; on its floor space are now shown the remarkable collection of gigantic fossil Edentates of South America—Mylodon, Glyptodon, etc., acquired by the Council of the College in 1835. Room V was built in 1852; its floor space is devoted to Mammalian Osteology, the arrangement being the work of that master of museums—the late Sir William Flower.

Last year, by extending the museum into the basement, a sixth room was added to accommodate the large and valuable collection formed by the Odontological Society, which is now merged in the Royal Society of Medicine as its Odontological Section. The arrangement of the Odontological Collection, which has been increased by numerous specimens added from the College Collection, including many Hunterian preparations, was recently described in our pages (December 11th, 1909, p. 1686).



Plan of the Museum of the Royal College of Surgeons of England.

Other recent extensions and additions to the museum are the following: The Nubian Pathological Collection, consisting of 500 specimens illustrating the diseases of the ancient inhabitants of Nubia. A historical cabinet, containing specimens illustrating curious methods of embalming and mummification, such as the body of Mrs. van Butchell, wife of a famous Georgian quack, which was embalmed by Drs. William Hunter and Cruickshank; instruments used in past times for restraining the insane, and others for maintaining chastity; specimens illustrating the diseases of distinguished personages, such as preparations alleged to have been obtained at the *post-mortem* examination of Napoleon the Great. Those interested in specimens of historical worth will find the anatomical plates made for John Evelyn at Padua in 1646, and described by him in his diary, displayed in Room II, and still in a remarkably good state of preservation.

To visitors from abroad, especially to those accustomed to State-maintained public institutions, this museum will present features which at first sight are not easily comprehended. The State, it is true, has on several critical occasions contributed liberally to its support; but it may be said justly that the museum is really a product of private enterprise. It is computed that a sum of £500,000 has been spent in building and maintaining the museum and in collecting and preserving the 62,000 specimens within its walls. Of that sum, £57,000 has been granted by Government; the remainder has been provided out of the funds of the Royal College of Surgeons of England. Many of its most valued possessions are the gifts of private donors. The collection which forms the foundation of the museum was all the savings and fortune left by Hunter for the maintenance of his family.

Members of the Association, especially those concerned with museum organization, will be interested to see the manner in which a card-catalogue system is being applied to the collection. Each specimen is being supplied with a descriptive card giving its history and characters. The cards are kept in specially contrived boxes which are placed on the museum shelves with the specimens, and are easily accessible for reference. A series of index cards, to serve the same purpose for the museum as an index does for the contents of a book, is being prepared, and will be placed for consultation in the hall of the museum, so that the visitor may readily discover the position and number of specimens representing whatever morbid condition he may wish to investigate. More than half of the museum is already furnished with specimen cards, but it is estimated that the preparation of the index cards will occupy a period of three years at least.

The following table shows the composition of the Hunterian Collection as handed over to the Corporation of Surgeons at the end of 1799, contrasted with its condition at the present time. The list also gives an idea of the museum contents:

	Hunterian Collection, 1799.	Museum Collection, 1910.
Pathological and Teratological specimens (Rooms I, II, III)	1,927	9,566
Calculi (Room III)...	536	2,095
Specimens illustrating function (physiological series)	4,362	10,429
Human anatomy and Osteology	—	4,902
Comparative Osteology	965	8,984
Zoological preparations (mostly of invertebrates)	5,677	9,041
Microscopical preparations	215	12,699
Surgical instruments (used in past times)...	—	806
Odontological collection	—	4,000
	13,682	62,531

The Pathological Curator, Mr. Shattock, assisted by Dr. Cecil Beadles, has commenced the Herculean task of revising and rearranging and recataloguing the Patho-

logical Collection. The revision of the Gynaecological Series of this collection is in the able hands of Mr. Alban Doran. The pathological specimens are to be arranged in the two great divisions adopted by Sir James Paget in former editions of the catalogue—namely, General Pathology and Special Pathology. Under General Pathology are grouped those specimens which illustrate atrophy, hypertrophy, inflammation, grafting, repair, necrosis, gangrene, tumours, etc.; under Special Pathology, specimens illustrating the diseases of each organ or part. In the new arrangement the Section of General Pathology is to be greatly extended. The beautiful preparations made by Mr. Shattock some years ago, to illustrate infectious organisms and processes, are to be included in this section; so are those specimens which illustrate the results of experimental pathology, such as the very instructive series recently presented by the Cancer Research Association, and the series showing the results of castration and other experimental lesions. When the rearrangement is completed, the general pathological section will form an unrivalled exemplification of the morbid processes of the human body.

The collection of Entozoa has been revised, extended, and redescribed with marked ability by Dr. Robert T. Leiper, of the London School of Tropical Medicine.

It is impossible in the space at our disposal to give any description of the contents of the museum; the extent and scientific worth of the Physiological Series must be seen to be realized. The annexed plan shows the general arrangement of the museum contents. A special booklet, to serve as a guide to visitors, is in course of preparation. Those interested in Hunterian relics and specimens will find the museum staff very willing to serve as guides to the various parts of the museum in which they can be seen and examined.

(To be continued.)

THE CAUSES OF INFANTILE MORTALITY.

An Illustration from Bavaria.

Notwithstanding the deserved triumphs which Germany has won in the department of public health, some features in her national life have given matter for anxious thought to those charged with the public health administration of the empire; not the least important of these is the question of infantile mortality. The extent of the evil is clearly shown by the following figures which we extract from the recently published *Deutsche Sterbetafeln* for the decennium 1891–1900[1]:

Country.	Survivors of 100,000 Born, Living at the End of the First Year.
Sweden	88,917
France	83,674
Belgium	83,114
England and Wales	82,814
Massachusetts	82,767
Holland	82,681
Italy	82,481
Germany	76 614
Austria	75,028

It will be noticed that relatively Germany is almost as much worse than Italy, the next in order, as Italy is inferior to Sweden, who heads the list.

The German or Austrian statesman could justly quote the haunting lines of the *Aeneid*:

> Continuo auditae voces vagitus et ingens
> Infantumque animae flentes in limine primo,
> Quos dulcis vitae exsortis et ab ubere raptos
> Abstulit atra dies et funere mersit acerbo.

The statistics of the different regions of the German Empire show that this death-rate is not uniformly high; in West Prussia, for instance, the survivors of the original 100,000 at the end of the first year of life reach 82,200, while the corresponding figures for Saxony and Bavaria are 69,945 and 71,289 respectively. A good deal of attention has been directed to the Bavarian mortality; we recently reviewed a monograph by Von Vogl dealing with this topic, and we desire now to direct attention to an elaborate inquiry made by Dr. Alfred Groth and Professor Martin Hahn.[2]

We are not, we think, doing an injustice to the valuable work of Prinzing, Möllhausen, Krause, and others when we describe the present monograph as one of the most extensive which has yet appeared. The authors begin by summarizing the changes in infantile mortality and the birth-rate which have been observed in the kingdom of Bavaria between 1835 and 1904, the statistical data being clearly presented in tabular form. They then enter upon the main portion of their inquiry, which is to ascertain the chief factors determining the rate of infantile mortality at the present time.

For purposes of comparison the different provinces are divided into *Unmittelbare Städte* and *Bezirksämter*, categories which roughly correspond to our urban and rural districts, the former, of course, including the great cities, such as Münich and Augsburg. The variables brought into relation with the mortality are pauperism, the birth-rate, and the method of feeding the infant. Taking the influence of a high birth-rate first, although many of the rural districts seem to suggest a fairly close correspondence between a high birth-rate and a high infantile death-rate, this is not so manifest in the case of urban districts. The authors conclude that the connexion between the birth-rate and infantile mortality is neither direct nor simple. It may be remarked that Heron, working on the figures for London parishes in 1901, found a correlation of 0.5 between the birth-rate and the number of infants per 1,000 births dying under the age of 1 year.[3]

The authors have chosen as a criterion of poverty the percentage of persons in each division who have received public assistance (*Unterstützte*). Here, again, they conclude that although there is a correspondence between the rate of pauperism and infantile mortality, the connexion is not a direct one, that pauperism *per se* is not necessarily a causative factor.

Lastly, the authors deal with the relation between methods of feeding and infantile mortality. This section is based upon returns made by the medical officers in charge of the public vaccination departments who had been requested to inquire whether the infants brought to be vaccinated were bottle or breast fed, and, in the former case, to ascertain the exact kind of nourishment. The medical officers loyally responded to this appeal, and, as a result, enough returns were obtained to be tolerably representative of many of the districts. The returns—which are presented in upwards of a hundred detailed tables and compared with the mortality figures—suggest a close relationship between infantile mortality and bottle feeding, and the authors conclude that this factor is the most important among the causes at work.

The memoir concludes with a study of the influence upon the fitness of recruits exerted by the conditions discussed in the earlier sections of the paper. The authors are of opinion that the artificial feeding of infants is associated with a low standard of fitness for military service, but we cannot feel that they have established the truth of their contention.

An excellent feature of the work is the careful way in which possible or probable fallacies in the data are brought forward and discussed.

From what we have said, it will be clear that the composition of this monograph must have involved an immense amount of labour, and that it has resulted in the bringing together of a mass of valuable information. We cannot, however, honestly say the methods of reduction adopted by Drs. Groth and Hahn appear at all adequate to the task they had in view. We think many readers will feel, especially when they examine the later sections of the essay, that the authors are determined to see everywhere, even in apparently irreconcilable facts, proofs of their contention that bottle feeding is the prime evil. Though they frequently lay stress upon the intricacy of the problem, yet they do not appear to have realized that so complex a matter demands a somewhat more subtle method of attack than is afforded by the

[1] *Deutsche Sterbetafeln* für das Jahrzehnt 1891 bis 1900. Berlin, 1910.

[2] *Die Säuglinsverhältnisse in Bayern.* Von Dr. Alfred Groth und Professor Martin Hahn. (Sonderabdruck aus der Zeitschrift des K. Bayer, Statistischen Landesamts Jahrgang 1910. Heft 1. München, 1910. J. Lindauersche Buchhandlung, pp. 88 with 13 figs. Price 2 mks.)

[3] Heron, "On the Relation of Fertility in Man to Social Status, etc." *Drapers' Company Research Memoirs.* 1906. London: Dulau and Co.

simple plan of tabulating figures and percentages, or drawing rather unsatisfactory diagrams.

The truth is, we think, that this is pre-eminently a case for the use of the method of correlation. The problem is—given a number of measurable factors each of which affects the infantile mortality, which is the most important?

We will illustrate the line of treatment which should, we think, have been adopted. Let us suppose that we require to determine the relative importance of (1) poverty and (2) artificial feeding as factors in the death-rate of infants. Taking the data for rural districts, we find that the correlation between artificial feeding and infantile mortality is 0.77, and between pauperism and mortality 0.44. There is also a correlation of 0.37 between pauperism and artificial feeding.

We now require to know how much of the first two correlations is indirect and dependent upon the correlation between artificial feeding and pauperism. Using a well-known theorem,[4] we find that the correlation between pauperism and infant mortality when the part due to artificial feeding is eliminated, becomes 0.26, while the correlation between artificial feeding and mortality when the factor of poverty is similarly kept constant becomes 0.73. In other words, infantile mortality is much more closely associated with artificial feeding than with pauperism.

These remarks are intended merely as an illustration of method. In a proper treatment of the subject a fourth variable, namely, the birth-rate, would have to be considered, and of course the rest of the data would require analysis. We may return to this subject on another occasion. At present it is sufficient to indicate what seems to be the proper method of handling a most important problem. We must not, however, part company from Drs. Groth and Hahn in a carping spirit. We heartily wish that their zeal and industry might find numerous imitators, especially in the ranks of that band of well-meaning persons who favour the profession with advice and criticism. It may be that some of our brethren, while studying the works of eminent statisticians, have been involuntarily reminded of a criticism addressed to certain sons of Levi; still, it must never be forgotten that in the collection and analysis of statistical data lies the only hope of arriving at truths of paramount importance.

DISTRIBUTION OF DISEASES IN PERSIA.

DR. M. M. BASIL, now of Taurni, Constantinople, who practised in Teheran from the end of 1889 to May, 1909, and who, he tells us, was from 1890 to 1906 the teacher of the hundred students who passed through a curriculum of six years at the Imperial Polytechnic College there, has sent us some notes on disease as he observed it in Persia from which we quote the following:

1. *General paralysis of the insane* is a disease entirely unseen in Persia. No case of it was seen by me in Teheran. My inquiries in Resht and Ispahan confirm my Teheran experience. I was assistant medical superintendent of the District Lunatic Asylum at Melrose for three years, and I have travelled all over Scotland specially to visit asylum work, and should not have overlooked a case. When I drew the attention of the late Sir Joseph Tholozan to this remarkable fact, he thought he had one case to show to prove the existence of the disease in Teheran. We visited the gentleman, and the presence of equality of pupils, absence of any tremors about the mouth—in fact, the total absence of all physical signs of the disease—compelled me to reject the diagnosis in spite of vague mental symptoms. The gentleman lives yet without any further development of the disease, and mentally he is not more ambitious than most Persians.

2. *Tabes dorsalis* is an extremely rare disease in Teheran. I have seen only one case in which the symptoms and the evolution of the disease to the end left no doubt as to the diagnosis. My experience of twenty years makes me look on any case of ataxia in a Persian with grave doubts.

Opinions would naturally differ as to the cause of the absence of the first disease and the rarity of the second in Teheran. My own impression is that the form of alcohol consumed by the Persians is an important factor. Wine is made in Persia after the manner frequently referred to in the Scriptures. Bunches of grapes are crushed by men walking on them, then put into vats; after a few days of fermentation and stirring the whole mass is allowed to mature, filtered in a rough way, and the alcohol of the dregs left on the filter is distilled off. Or raisins mixed with water are put into vats and, after fermentation, subjected to distillation; 99 per cent. of the alcohol consumed in Persia is thus obtained directly from the fermentation of grape sugar without the possibility of any adulteration. Whisky, brandy, vodka, and other European forms of alcohol are rarely used, being consumed more as luxuries than ordinary beverages. Tabes dorsalis and general paralysis of the insane cannot be due to worry, overwork, anxiety, etc., because all these causes exist in Persia, and in the troublesome domestic and uncertain political life of Persia they are even more powerful than in Europe. These maladies cannot be due to syphilis, for, without going so far as to say that syphilis is as common in Teheran as in London, Edinburgh, and Manchester, I can say that syphilis is frequent in Teheran. All forms of the disease are seen daily. Ataxia is not a para-syphilitic disease as far as Persia is concerned. It would be interesting to search in old medical literature in Europe in the days when the popular beverage of the people—in England and France, for example—was wine and eau de vie, to see if then any disease resembling general paralysis of the insane and tabes dorsalis were recorded. Both are conditions with features so striking that it is almost inconceivable to suppose that they existed in Europe in the old days and were overlooked or mistaken for other diseases.

3. *Gastric ulcer* is unknown in Persia. Cirrhosis of the liver and tuberculosis of the alimentary tract are frequent and various forms of severe dyspepsia are seen especially among sedentary students. In all these conditions well-marked haematemesis may occur, but the condition met with in Europe mostly in anaemic, stout subjects, especially young women and associated with the round ulcer of the stomach, is unknown in Persia. I graduated in Edinburgh, 1882, and left England in September, 1889, being in hospital, asylum, or private practice for seven years before going to Persia. For three years I was non-resident house-surgeon to the Manchester Southern Hospital for Women and Children. In Manchester especially I saw cases of gastric ulcer for prolonged periods clinically, and on the operation table, or in the *post-mortem* room. My clinical experience in Teheran does not point to any similar disease among Persians, but pathological work on any extensive scale is out of the question. Persians are residents of elevated table-lands and like inhabitants of other mountainous countries are full-blooded. Milk is seldom taken by Persians. It is transformed into yoghurd or mast and used in this form as food. Vegetable food, and especially vegetable acids, lemon juice, the juice of unripe grapes, sour fruits, etc., enter largely into the dietary of Persians. Rice and bread form the staple articles of food; meat occupies a secondary place. The above conditions combined with many others, for example, abundant supply of air and light, contribute to make digestion easier in Persia than in Europe.

4. *Traumatic tetanus* is a rare disease in Teheran. During the first three years of my medical studies I followed the clinical work in the medical and surgical wards of the hospital of the Medical College of Bengal. Traumatic tetanus is seen frequently in India, and in Calcutta I saw many cases of it. I was surprised during the first five years of my experience in Teheran, and in spite of special inquiries, that I never saw or heard of an undoubted case of traumatic tetanus in Persia. The Arabic word for tetanus (*kozaze*) corresponds to our trismus (lockjaw), and the native physicians often diagnose tetanus when from any local irritation they observe trismus. I have never seen a case of idiopathic tetanus in Persia, where strychnine poisoning is very frequent. I have the detailed history from non-medical sources of two cases of very severe spasmodic disease, one ending in death, one in complete recovery, in the same family, at different periods; they occurred at Julfa, near Ispahan and from the accounts given to me I suppose them to have been cases of tetanus following parturition.

[4] Yule, *Proc. Roy. Soc.*, vol. lx, p. 477 et seq.

5. *Tabes mesenterica* is a rare disease in Persia. I never saw a well-marked case in a Mohammedan child in Persia, yet tuberculous intestinal disease is a common malady among Persian adults. Pulmonary phthisis is seen in Teheran, and even in Resht, which is sometimes said to be free from tuberculous phthisis. In Teheran the old quarters, where houses of over a hundred years old exist, low down among valleys, phthisis is not rare, and is most often seen in the colony coming from Azerbijan. Intestinal tuberculosis, primary, as far as my experience goes, is frequent in Teheran—quite out of proportion, judging from European experience, to the cases of pulmonary phthisis. I fancy the large quantity of dry, indigestible vegetable material, in the way of the seeds of pomegranates, roasted almonds, pistaches, seeds of melons, of water-melons, etc., continually ingested by the Persians, are causes of intestinal breaches of continuity on which tuberculous disease is easily inoculated. I fancy also that the Persian child is not subject to intestinal tuberculosis to the same extent as children in Europe, because hand-feeding is very rare. Koranic law—at any rate, the Persian interpretation of the law—requires every child to be fed on the breast for two years. The vast majority of Persian children are nursed by their mothers; in the upper grades of society nurses are employed frequently, but artificial feeding is never seen among Persians. Lactation is generally prolonged wellnigh to eighteen months or two years.

6. *Malignant disease* is less common in Persia than in Europe. Sarcoma is frequently seen, but true carcinoma is rare. I have never seen any case of true uterine cancer in a Persian. My cases have been in Armenian women; "cancer of the uterus," when diagnosed by Persian physicians in Mohammedan women, has invariably on careful physical examination proved to be something else. Fibroids of the uterus are seen frequently. Cancer of the breast is not rare among Persians, but the vast majority of cases of cancer seen in Teheran are in connexion with the abdominal cavity, mostly gastric in origin. Persians connect the origin of cancer and of tuberculosis with special houses, and, as in India, special cholera houses are pointed out by old Indian residents; similarly, "cancer and phthisis houses" are pointed out by old Persians. In Teheran there are really very few ancient houses. All over Persia the mosques, public baths, bazaars, and caravanseries form the principal old buildings. Private houses are generally made of perishable material. They are more or less of the nature of tents rather than of permanent family dwellings. In Teheran there is comparatively a heavy rainfall, and as the roofs of houses have generally perishable beams, few houses last over fifty or sixty years. Even in the old quarters of the city there are few dwellings dating as far back as a hundred years. It is specially in the old quarters of the city that I have seen cases of cancer and phthisis. In Ispahan, ancient brick houses are sometimes met with, and it is specially among old Ispahan families that the theory connecting the existence of cancer and phthisis with special dwellings is rooted.

7. *Appendicitis* is rare among Persians. In Teheran I have seen cases of this disease frequently enough, but among Europeans, Armenians, and such Mohammedans as have lived abroad, in Russia and Turkey, and have more or less adopted Western ways of living. In primitive Persians, feeding on the simple diet of the country, I do not remember seeing any case of appendicitis.

8. *Diabetes* is much more rare in Persia than in Europe, and the prognosis of a case is less grave. I have known cases doing well for years. I remember two cases with grave symptoms commencing in Persians during a journey in Europe; on returning to Teheran the diabetes disappeared after a very simple treatment by sodium salicylate. Persians feed on plain food in the fresh condition. They do not understand keeping butcher's meat to make it tender. Europeans, on the contrary, are specially prone to diabetes in Persia.

9. *Bright's disease* is frequently seen among Persians, but the prognosis is less serious than in Europe. I remember many cases I saw during my earlier years in which, from my experience in England, I pronounced death not far off. Yet most of them were living years after. Patients suffering from kidney disease who are consumers of opium die rapidly in the severe dry frost of Persia. Persian climatic conditions are peculiar; high elevation, great dryness promoting free evaporation from the skin, and mostly small range between the day and night temperature. In particular stations where the climate is damp, or severe cold nights follow hot days, patients with Bright's disease do badly.

10. *Vesical or urinary calculus* is not a very frequent disease in Teheran. Persians who have passed many years in and near Mesopotamia—as Kerbella, Nedjef, Bagdad, etc.—often come back to Teheran suffering from abundant bleeding from the bladder. I suppose this must be the result of some parasitic disease, but I have not been able to prove it.

11. *Rickets* to any marked extent is rare. Bandy legs, to the extent of demanding operative interference, are scarce, but rickets sometimes cause marked malformation of the whole body, often to a very slight degree. The sparsity of population in Persia gives plenty of space and air to each individual; add to this a dry climate and abundant light, and we have all the conditions that are necessary for the prevention of rickets. But the Eastern habit of swathing or bandaging a child is not without effect in keeping the bones straight. A Persian child is sprinkled with salt immediately after birth; it is then swathed, and is washed for the first time about the third day. This "salting" hardens the skin and renders it less irritable in that dry, sunny climate. The child is kept strictly bandaged, the lower and upper limbs and even the head religiously submitted to pressure and correction, for several months. This prolonged orthopaedic treatment gives straight bones, a peculiarly long head, and a remarkably deep thoracic cavity. The heart of the Persian is generally lower in the thoracic cavity than that of the European; the liver is often felt below the right costal edge without being diseased, and the stomach is always dilated without any abnormal state.

12. *Progressive pernicious anaemia* I have never seen in Persia; I have seen only 1 case of leucocythemia, 2 or 3 of Hodgkin's disease, 2 of Graves's disease, and 1 of Addison's, known to the native physicians as black jaundice, and supposed to be connected with some form of liver disease.

13. *Typhoid fever* is frequent in Teheran among Europeans, specially the English, less frequent among Armenians, and least of all among Mohammedans. The late Sir J. Tholozan doubted whether it existed among Persians; Dr. Polack wrote that it did not exist. I have watched undoubted cases of it among Persians, men, women, and young children, but I feel sure Persians are less liable to it than other races. A whole camp follows the Shah on his journeys, and it is generally the European employee who takes typhoid. Persians believe that beef-eating renders people liable to take typhoid fever, and except in the cold of winter Persians do not eat beef. Typhus fever is rarely seen in Teheran, but sporadic cases sometimes come under observation. On two occasions I have seen many cases in the summer. A group of Kurdish cossacks brought seven cases to the hospital attached to the regiment. I have known other cases imported from the old town of Demavend or Larigan.

14. *Mumps, whooping-cough, and scarlet fever* sometimes disappear from Persia for years, and when an epidemic occurs many Persian physicians do not recognize them. In the last epidemic of mumps in Teheran many men of over 50 or 60 took the disease. In the south of Persia scarlet fever is said to disappear for fifty or sixty years. Scarlatina is very mild in Persia in the spring and in autumn, but extremely dangerous if the outbreak occurs in the thirty or forty hot, dry days of midsummer. I have not seen it in the depth of winter. Measles is frequently seen in Persia, and, except during the severe frost of the winter or the height of summer, it is a very mild affection.

THE Balneological and Climatological Section of the Royal Society of Medicine is to hold a provincial meeting at Buxton on Saturday, May 28th. A full programme of the proceedings can be obtained on application to Dr. Septimus Sunderland. They include visits to the Devonshire Hospital and the baths, and cover the week-end. A carriage for members will be reserved in the train leaving St. Pancras at 10.5 a.m.

A DRASTIC TREATMENT FOR ALCOHOLISM.

DR. ALEXANDER LAMBERT published last autumn in the *Journal of the American Medical Association* an article with the title, "The Obliteration of the Craving for Narcotics."[1] It opened with the statement that if the writer, who is Visiting Physician to the Bellevue Hospital, New York, and Professor of Clinical Medicine in Cornell University, had been told some years ago that it was possible to take away the desire for morphine, cocaine, or alcohol in less than five days with a minimum amount of suffering and discomfort to the patient, he would have felt justified in treating the statement with polite scepticism. The treatment he has now adopted was brought to his notice by Mr. Charles B. Towns, of New York, not a member of the medical profession, who has since communicated details to Dr. Lambert. The prescriptions he uses are as follows:

The Compound Tincture.

℞ Tinctae belladonnae	... ...	℥ ij
Fluid extract of xanthoxylum	... ...	℥ j
Fluid extract of hyoscyamus	... ...	℥ j

Initial dose vi–viii ♏.

Compound Cathartic Pill.

℞ Extracti colocynthidis compositi	... ...	gr. j½
Hydrargyri chloridi mitis	... ...	gr. j
Cambogiae	... ...	gr. ¼
Resinae jalapae	... ...	gr. ½

Vegetable Cathartic Pill.

℞ Extracti colocynthidis compositi	...	gr. j
Extracti hyoscyami, Extracti jalapae	... ...	āā gr. ss
Extracti leptandrae, Extracti resinae podophylli	...	āā gr. ¼
Olei menthae piperitae	... ...	♏ ½

The second prescription is the compound cathartic pill, the third the vegetable cathartic pill, *U.S.P.* To the vegetable cathartic pills he adds oleo-resin of capsicum $\frac{1}{10}$, ginger gr. ½, croton oil $\frac{1}{25}$ ♏. He also found it desirable to have the pill mass freshly made, or to have it enclosed in capsules, as ordinary stock preparations were too dry to act efficiently.

Xanthoxylum, or powdered bark of prickly ash, is official in the *United States Pharmacopoeia*, and is described as a stimulant producing when swallowed a sense of heat in the stomach, with more or less general arterial excitement and a tendency to diaphoresis. It seems to have been used chiefly as a cure for chronic rheumatism.

By tincture of belladonna in the above prescription Dr. Lambert means "the old 15 per cent. tincture of belladonna, *U.S.P.*"; and Mr. Martindale informs us that 6 to 8 minims of the above compound tincture would contain 3 to 4 minims of the tincture of belladonna, *B.P.* Dr. Lambert also had blue mass (strength 33 per cent. as compared with the blue pill, *B.P.*, strength 40 per cent.) put up in capsules containing 5 grains.

There is therefore nothing very novel about the drugs, and we do not understand that Dr. Lambert claims any novelty on this head; the novelty would appear to be the use of the compound tincture as part of a course of treatment in which catharsis is an important element. Apparently the cases have been treated in the ordinary hospital wards, and we gather that in most of the cases of alcoholism the patient has been admitted, to use Dr. Lambert's phrase, "in the midst of his spree or at the end of it."

Dr. Lambert first describes the treatment of cases of morphine or cocaine addiction as follows: He begins by giving four compound cathartic pills and 5 grains of blue mass, and at the same time an enema of soap suds; when the bowels have begun to act he begins to give the compound tincture; at first he gives 6 to 8 minims every hour, increasing the quantity by 2 minims every six hours, until 14 or 16 minims are being taken every hour. If signs of belladonna poisoning are noticed, the compound tincture must be stopped until they have subsided, when it should be given again in 8 minim doses. At the beginning of the treatment with the compound tincture he gives, in three doses, at half-hour intervals, from half to two-thirds of the total daily dose of opium, morphine, or cocaine usually taken by the patient; fourteen hours after the first dose of the compound tincture he gives four compound cathartic pills and 5 grains of blue mass, and again, six hours later, four compound cathartic pills and four to six vegetable cathartic pills. If catharsis is not produced within three or four hours the pills must be repeated with 5 to 10 grains of blue mass. If this be not done the patients are liable to begin to vomit, and the distressing symptoms produced by the withdrawal of the narcotic will he states, come out in full force; at this time an ox-gall enema is sometimes of assistance. After the bowels have acted, but not before, one-third or half of the original dose of the narcotic may be given; it makes the patient comfortable and contented, and ready for the final stage. This begins twelve hours later by the administration of four compound cathartic pills and four to six vegetable cathartic pills, with 5 grains of blue mass; six hours later this is followed by an ounce or more of castor oil in coffee or orange juice. Nervousness and discomfort occurring before the castor oil acts should be met by a dose of 2 to 5 grains of codeine phosphate, given hypodermically. The castor oil ought to produce a characteristic stool showing that the treatment may cease. It is a liquid green stool composed of mucus and bile, and its passage is usually followed by the disappearance of discomfort. After the patient has been under treatment for thirty hours a cardiac stimulant, strychnine $\frac{1}{30}$ to $\frac{1}{60}$ grain every three hours, or digitalis or strophanthus, should be given, alone or in combination. During the treatment the patient should have a regular diet of easily digested food, such as eggs, cereals, bread-and-butter, and vegetables; coffee or tea may be given if desired by the patient. The appetite often becomes voracious, and during the first week care must be taken that the patient does not over-eat himself.

In the treatment of alcoholics the same plan is followed, but it does not usually need to be continued so long. Much closer observation is necessary to recognize the early symptoms of belladonna poisoning, an alcoholic being sensitive to that drug. Dr. Lambert considers that belladonna delirium is less ferocious and less pugnacious than that produced by alcohol, and that the patients are more persistent and insistent in their ideas and more incisive in their statements concerning their hallucinations. Hallucinations produced by alcohol are usually those of an occupation delirium, those of belladonna are not; further, the belladonna delirium is apt to be confined to one or two ideas, whereas the hallucinations of alcohol follow each other so quickly, that the patient is busily engaged in observing them one after another. When an alcoholic is admitted "in the midst of his spree or at the end of it," the first thing to do is to put him to sleep, and a hypnotic is given after the first four compound cathartic pills; the hypnotic which Dr. Lambert states has given him the best results is the following:

℞ Chloral. hydrat.	... ...	gr. xv
Morphinae	... ...	gr. ½
Tincturae hyoscyami	... ...	♏ ss
Tincturae zingiberis	... ...	♏ x
Tincturae capsici	... ...	♏ v
Aquam	... ...	ad ℥ ss

This dose can be repeated in an hour, with or without 1 or 2 drachms of paraldehyd.

If these are not effective within two hours, or even less, and the patient's delirium is of the furious, thrashing, motor type, a hypodermic injection of the following will almost invariably quiet him:

Strychninae sulphatis	... ...	gr. $\frac{1}{30}$.
Hyoscyamin. sulphatis	... ...	gr. $\frac{1}{100}$.
Apomorphinae hydrochloridi	... ...	gr. $\frac{1}{10}$.

If sleep is difficult to obtain, the patient is allowed to sleep until he wakes; but if he goes to sleep easily, he is awakened every hour for a dose of the compound tincture. Save in the young robust alcoholic Dr. Lambert considers it wise to give most alcoholic patients $\frac{1}{60}$ to $\frac{1}{30}$ of a grain of strychnine every four hours. Fourteen hours after beginning the compound tincture the patient should again be given a cathartic, either the same dose of four compound cathartic pills, or one half that quantity with 5 grains of blue mass. At this stage the young, full-blooded alcoholic may need a further dose of hypnotic, but need not be given alcohol; the older alcoholics and those in a weak and poor physical condition should have 1 to 2 oz. of whisky about four times a day with milk during the first twenty-four hours, during the second twenty-four hours two doses will probably suffice. After the second dose of cathartics has acted, if the patient begins to show the characteristic green, mucous stools, he should be given an ounce of castor oil, and from this dose the characteristic stool, as described under morphine, will appear and the treatment may cease. If, however, the green stool does not begin to appear at this time, further

[1] Vol. liii, p. 985.

compound cathartic pills should be given, and as soon as the green stools begin to appear the castor oil should be given.

The treatment, Dr. Lambert says, establishes a patient's self-reliance to go on without alcohol; it will do all that can be done for a man who honestly desires to be helped, but he cannot touch alcohol in any form whatever without a danger of a relapse.

THE DEATH OF KING EDWARD.

The following addresses of condolence have been presented to King George V and the Queen Mother on the death of King Edward VII:

Royal College of Surgeons of England.

THE HUMBLE ADDRESS
OF THE
PRESIDENT, VICE-PRESIDENTS, AND COUNCIL
OF THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND
TO
HIS MOST EXCELLENT MAJESTY
GEORGE V,
KING OF GREAT BRITAIN AND IRELAND.

May it please Your Majesty,

We, the President, Vice-Presidents, and Council of the Royal College of Surgeons of England, venture to approach Your Majesty in order to express our deep grief at the sudden and unexpected death of Your Majesty's beloved Father, our late revered Sovereign, and we humbly pray Your Majesty graciously to receive our respectful sympathy.

During his reign, which was all too short, he gained the love and confidence of his subjects throughout the world to a degree which we believe has never been surpassed by any Sovereign. At the same time he endeared himself to the people of foreign countries in a remarkable manner by his tact, courtesy, and kindness, so that his death will be felt by them in little less degree than by his own subjects.

Surely, no Monarch was ever more sincerely mourned than he will be.

We desire respectfully to express our devoted loyalty to Your Majesty, and our trust that God may grant You good health and that Your Majesty may live to reign for many years in the hearts of Your people.

L. S.

In witness whereof we, Your Majesty's loyal and dutiful subjects, have caused the Common Seal of the College to be hereunto affixed this 12th day of May, 1910.

HENRY T. BUTLIN,
President.

THE HUMBLE ADDRESS
OF THE
PRESIDENT, VICE-PRESIDENTS, AND COUNCIL
OF THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND
TO
HER MAJESTY QUEEN ALEXANDRA.

May it please Your Majesty,

We, the President, Vice-Presidents, and Council of the Royal College of Surgeons of England, desire humbly to offer our sincere and respectful condolence with Your Majesty under the great loss which Your Majesty and Your Illustrious Family have sustained by the sudden and unexpected death of His Majesty King Edward VII.

We earnestly and respectfully trust that the expressions of grief which have been sent from every part of the world will help to mitigate, in some degree, Your Majesty's own private sorrow.

L. S.

In witness whereof we, Your Majesty's loyal and dutiful subjects, have caused the Common Seal of the College to be hereunto affixed this 12th day of May, 1910.

HENRY T. BUTLIN,
President.

Royal College of Physicians, Edinburgh.

The following addresses were proposed by the President (Dr. Allan Jamieson) and unanimously agreed to by the Fellows of the College, upstanding, at an Extraordinary Meeting of the College held on May 12th, 1910.

TO THE KING'S MOST EXCELLENT MAJESTY.

May it please Your Majesty,

We, the President and Fellows of the Royal College of Physicians of Edinburgh, humbly approach Your Majesty to express our profound sympathy in the great bereavement which has been suffered by Your Majesty, your Royal Consort, the Queen Mother, and the other Members of the Royal Family in the death of our much-beloved Sovereign King Edward.

With the nation at large, we mourn the loss of one whose life was so conspicuously devoted to the maintenance of peace, not only within the confines of the Empire over which he ruled, but throughout the world.

This influence was achieved in great measure by his unfailing tact, his accurate knowledge of mankind, his geniality of disposition, his gift of recollection and recognition of individuals, and his conspicuous devotion to the discharge of every duty.

To us as Members of the Medical Profession, King Edward's active interest in the health of his subjects comes specially home. The influence of his work, as Prince of Wales, on behalf of the London Hospitals was felt far beyond London, while the great interest he took in the subjects of Cancer and Consumption will, we believe, yield abundant fruit in the future.

We most loyally and heartily congratulate Your Majesty on your accession to the Throne, and we confidently anticipate that your wide experience of travel and consequent familiarity with all parts of your dominions and their inhabitants will specially appeal to a nation which loves a sailor King.

We hail with satisfaction your love for the country, for field sports, and for quiet domesticity, as a means of directing the trend of thought towards that simpler existence and plainer life on which we, as medical men, lay so much stress.

In assuring Your Majesty of our most loyal and dutiful allegiance, we warmly express the hope that with Your Gracious Queen Consort you may long be spared to reign over a happy and prosperous Empire.

Signed in name and under the seal of the Royal College of Physicians of Edinburgh this the Twelfth day of May, One thousand nine hundred and ten year.

UNTO HER MAJESTY QUEEN ALEXANDRA.

May it please Your Majesty,

We, the President, Vice-President, and Fellows of the Royal College of Physicians of Edinburgh, desire to convey to Your Majesty our truest sympathy in the sad and unlooked-for bereavement Your Majesty has sustained. We rejoice in the thought that King Edward was spared acute pain or prolonged and exhausting suffering, and that Almighty God so tenderly took him into His keeping. Your Majesty's address has touched every heart, and we are sure that your wishes therein expressed will be most faithfully and loyally obeyed. It is our earnest hope that Your Majesty may be long spared to a peaceful and much-honoured life among a devoted people.

Middlesex Hospital.

At a special meeting of the Court of Governors, held on May 13th, at the instance of His Serene Highness Prince Francis of Teck, an address of condolence to His Majesty King George V was moved by the Duke of Northumberland and seconded by the Hon. G. W. Spencer Lyttelton. The Duke also moved the address to Her Majesty the Queen Mother, and this was seconded by the Hon. Walter Rothschild. The following is the text of the addresses:

TO THE KING'S MOST EXCELLENT MAJESTY.

The humble address of the President, Vice-Presidents, Treasurers, Weekly Board, Medical Staff, and Governors of the Middlesex Hospital:

Most Gracious Sovereign,

We, Your Majesty's dutiful and loyal subjects, humbly venture to approach your Royal Presence to offer our

respectful sympathy, and to express our heartfelt sorrow at the lamented death of Your Majesty's august father, our late Sovereign Lord, King Edward.

We fully share the profound grief into which the whole Empire is plunged by the irreparable loss which Your Majesty has sustained, and we humbly trust that the universal tribute of respect and reverence paid to the memory of our beloved Sovereign may comfort and console Your Majesty in your bereavement.

We wish to record our deep sense of gratitude for the special mark of his Royal favour in graciously consenting to act as the Patron of this hospital throughout the entire period of his wise and beneficent reign.

We particularly desire to express our high appreciation of the many munificent gifts which His late Majesty bestowed upon this hospital, whilst we take especial pride in the reflection that it was largely due to the sympathy and interest which His Majesty displayed in every effort made for the alleviation of suffering and the encouragement of scientific research that the Middlesex Hospital Cancer Charity was established upon its present basis.

We recall with feelings of fervent admiration the noble work which His Majesty carried out by initiating King Edward's Hospital Fund for London, and later, by his continued influence, consolidating it into an organization which has already more than fulfilled the purpose it was designed to serve.

We further humbly crave leave respectfully to congratulate Your Majesty on your accession to the Throne of your Ancestors. We assure Your Majesty of our unalterable attachment and devotion to your person, and we fervently pray that Your Majesty may long be spared to guide the destinies of this realm.

NORTHUMBERLAND,
May 13th, 1910. *President of the Middlesex Hospital.*

TO HER MAJESTY QUEEN ALEXANDRA.

The humble address of the President, Vice-Presidents, Treasurers, Weekly Board, Medical Staff, and Governors of the Middlesex Hospital:

Your Gracious Majesty,

We humbly and respectfully venture to tender to Your Majesty an expressing of our profound and abiding sorrow at the death of His Majesty, King Edward the Seventh, of blessed and glorious memory, and to assure Your Majesty of the sincere and heartfelt sympathy we feel for Your Majesty in Your Majesty's grievous affliction and loss.

NORTHUMBERLAND,
May 13th, 1910. *President of the Middlesex Hospital.*

Royal Free Hospital.

At a meeting of the Board of the Royal Free Hospital, of which His late Majesty was Patron, the following addresses of condolence to His Majesty King George V and the Queen Mother were passed:

TO THE KING'S MOST EXCELLENT MAJESTY.

We, Your Majesty's most loyal and dutiful subjects, respectfully beg leave to express our heartfelt sorrow at the loss sustained by Your Majesty, the Royal Family, and the Empire by the death of Your Majesty's revered Father, our late most Gracious and Beloved Sovereign and Patron of this Institution, and also to express our dutiful congratulations upon Your Majesty's accession to the Throne, as well as our sincere attachment to Your Royal Person.

TO HER MAJESTY QUEEN ALEXANDRA.

That the Board of the Royal Free Hospital record their profound sorrow at the death of His Most Gracious Majesty King Edward the Seventh, who as Prince of Wales became the Vice-Patron of the Hospital in 1863, and in 1895 accompanied Your Majesty when publicly opening the new Alexandra Wing of this Hospital. Upon his accession to the Throne His late Majesty graciously confirmed his Royal favour, and became the Patron of the Hospital.

The Board respectfully tender to Your Majesty their heartfelt sorrow on the irreparable loss which Your Majesty and the Royal Family have sustained.

Reading Pathological Society.

At a meeting of this society held at the Royal Berkshire Hospital on May 12th, the following resolution was unanimously passed:

TO THE KING'S MOST EXCELLENT MAJESTY.

May it please Your Majesty,

The Reading Pathological Society desires to express its profound sorrow at the death of His Majesty King Edward VII. The interest in Medical and Sanitary Science which His late Majesty has so constantly shewn, together with the establishment of the King Edward Hospital Fund, call for the warmest recognition and gratitude on the part of the medical profession, which reveres his memory as that of one of the most enlightened of British Sovereigns.

The Society desires to offer its most loyal Homage to Your Majesty King George the Fifth and trusts that you may long reign over a prosperous and happy nation.

(Signed) JAMIESON B. HURRY, *President*,
N. B. CLOWES,
W. B. SECRETAN, *Honorary Secretaries*,
Reading Pathological Society.

It is worth noting that the Reading Pathological Society was founded in the same year that His late Majesty King Edward VII was born—namely, 1841.

SCIENCE NOTES.

IN the *Revue générale des sciences* Duclaux writes a comprehensive article on the present state of our knowledge of organized matter. The term "organized matter" is used to denote substances which are of a much more complex structure than organic compounds. The latter are definite compounds found in the body of living organisms, or derivatives of those containing carbon. Their composition is always the same whatever the source they are derived from, and whether obtained naturally or prepared synthetically. Organized substances, on the other hand, have no definite chemical composition. Their properties vary according to their method of preparation, and their molecular structure is of immense complexity. Many of them are apparently conglomerations, so to speak, of some simpler organic molecules bound together by some mysterious affinity, but this bond can be loosened by the action of ferments. Thus, amidon, an organized substance, is transformed into the organic compound maltose by the action of the ferment amylase. Similarly cellulose can be transformed into glucose. Albumen, casein, gelatine, and gum arabic are other familiar examples of organized substances. One property which these have in common is their inability to form crystals. At the same time they display several of the optical phenomena characteristic of crystals, as, for instance, the colour changes in polarized light. Some liquids have also analogous properties. Thus, judged by optical criteria, the idea of crystalline structure must be extended to include these amorphous organized bodies, which may be classed in an amorphous system of crystals. In other words, we must admit that these organized substances, in assuming the solid state, may take on at the same time a crystalline state, and that it is only the complexity of their molecule which prevents that fact being evidenced by the existence of a regular geometrical shape. How to represent these complex molecules is a difficulty, and it remains to be ascertained whether they are formed haphazardly or according to fixed laws. What is the force which produces them, and what force maintains them? Their constant association with living matter suggests the question whether they are characteristic of the latter, and, if not, why are they so widely spread throughout the animal and vegetable kingdom? With regard to the first part of this question the answer is negative, for by simple chemical means bodies resembling these organized compounds can be obtained from sodium silicate and several other inorganic salts. These all have the common property of being colloidal and of not

forming crystals. On being heated they coagulate like the white of egg; alcohol separates them from solution, and once separated they remain insoluble. Their properties are inconstant and indefinite like those of the natural organized compounds, and their composition varies in the same way. As regards the actual synthesis of the natural compounds, some advance has been made. Grimaux, for example, has succeeded in synthesizing colloids closely resembling albumen, and Fischer has prepared similar substances called polypeptids. From a polypeptid to an albumen is no great step, and possibly the time is not far distant when the synthesis of the latter will be actually realized. If, then, the presence of a living organism is not an essential factor in the production of organized matter, does the converse hold good? Is organized matter a necessary element in vital phenomena? The answer naturally is "Yes," and Duclaux proceeds to substantiate this. As already remarked, these colloid bodies when separated from solution remain absolutely insoluble. To an organism living in water such an insoluble substance is obviously of the greatest utility. Insolubility of its tissues is a necessity for its very existence. To organisms living out of water the same does not apply. Here, however, a *raison d'être* is found in the necessity for suppleness and movement. Imagine an animal or plant in which all the colloids were replaced by crystals. The result would be greater rigidity and cohesion, but at the same time greater fragility and immobility. Of greatest moment is the third claim to the importance of colloids in vital economy. All vital processes are effected by diffusion; *corpora non agunt nisi soluta*. This, however, necessitates the existence of a substance which will exercise a discriminating or selective action. It is essential that certain elements—to wit, inorganic salts—should be permitted to diffuse in one direction, and certain others, the products elaborated from these simple salts, should be prevented from diffusing in the opposite direction. Now it is impossible to construct from a crystalline substance a filter of this nature. The crystals and the spaces intervening between them would require to be many times smaller than those occurring naturally. A colloid, however, by reason of its curious structure, fulfils the necessary conditions. In diffusion the action is a molecular one, and the spaces between the molecules of the colloid are large enough to admit the passage of the small molecules of simple compounds, but retain the larger molecules of the products metabolized within the cell. The latter escape when from any cause the colloidal filter becomes incompetent through injury or disease, and such, we may suppose, is the case in nephritis and diabetes.

Many of our readers take an interest in grouse, some regarding them as objects of sport, others from the gastronomic, others, again, from the pathological point of view. For the benefit of the latter class it may be mentioned that at a meeting of the Zoological Society of London held on May 3rd, Dr. H. B. Fantham, F.Z.S., Protozoologist to the Grouse Disease Inquiry, read four papers relating to the protozoa and blood of grouse. In the first, entitled The Morphology and Life-History of *Eimeria* (*Coccidium*) *avium:* a Sporozoon causing a Fatal Disease among young Grouse, he gave a detailed account of the morphology and life-history of the coccidium, which destroys the epithelial lining of the duodenum and caeca of grouse chicks, causing enteritis accompanied by diarrhoea. The second paper, entitled Observations on the Parasitic Protozoa of the Red Grouse (*Lagopus scoticus*), set forth the author's observations on some seven other protozoa, parasitic in the blood or in the digestive tract of grouse. None of these parasites, however, could be said to be either numerous or very harmful to the birds examined. The parasites were *Leucocytozoon lovati*, in which schizogony in the spleen of the bird was recorded for the first time, not only for *Leucocytozoon lovati* but for *any* avian *Leucocytozoon; Haemoproteus mansoni* and *Spirochaeta lagopodis* in the blood; *Trichomonas eberthi* and *Spirochaeta lovati* in the caeca; and *Amoeba lagopodis* in the intestine and faeces. The spirochaetes and amoeba of grouse are new species. *Monocystis* spores are also found occasionally. All the parasitic protozoa mentioned were observed both alive and in stained preparations. The third paper dealt with Experimental Studies on Avian Coccidiosis, especially in relation to young Grouse, Fowls, and Pigeons. The results of many and varied experiments were recorded in this paper, relating to the time of ripening and duration of infectivity of coccidian oocysts, their dispersal by insect larvae, etc., and the effects of various reagents on the oocysts. The distribution of the parasites within the host was given, and the results of the transmission of grouse coccidiosis to young fowls and pigeons were set forth. Observations on the Blood of Grouse were discussed by the author in the fourth and last paper. The various blood cells were described, and the results of blood counts (both of red cells and of leucocytes differentially) of healthy and diseased birds were set forth. Both coccidiosis and strongylosis produce anaemia, and the presence of various parasites is also associated with numerical differences in the leucocytic elements of the blood.

LITERARY NOTES.

THE well-known French novelist, Marcelle Tinayre, points out that in modern fiction consumption has lost all the poetry with which sentimentalists used to invest the disease. In novels of a former day, especially in those written by women, there used to be two characters who, though rather ridiculous in themselves, excited the keen sympathy of sentimental ladies. There was the young consumptive lover and his pure-hearted betrothed. For more than half a century this couple was fashionable. The lovers were described as wandering about under weeping willows amid landscapes strewn with ruins and embellished with waterfalls. The pale young man discoursed on the fall of the leaves, and blasphemed the god who had cursed him by refusing him the terrestrial joys of love. His devoted sweetheart foretold that he would be cured by the spring of the following year, and assured him that in any case she would be faithful to his memory, and that if it was their fate to be separated on earth, they would be reunited in Heaven. For a long time these two lovers reappeared in one book after another, to the weariness of many readers, but they quite suddenly became unfashionable. This is attributed by Marcelle Tinayre to the discovery that phthisis is not necessarily fatal, but that it is often contagious. As a matter of fact, this was not a discovery but the rediscovery of a truth which had been taught for centuries, and which was acted upon with great stringency till about the early third or middle of the last century. Then the view that phthisis is not contagious became dominant. In many places, however, the popular instinct held fast by the idea of contagion, and the doctors came round again to the old doctrine when Villemin proved the infectivity of tuberculosis in 1866. For a time he was looked upon with suspicion by the "superior person." It was not till Koch announced the discovery of the bacillus in 1882 that Villemin was fully vindicated. This is only a parenthesis. The romance of consumption was spoiled when men of science demonstrated the action of a microbe where people before had seen an elegant wasting, a poetical fever, a sort of sacred disease—the most literary of all diseases Marcelle Tinayre calls it. All this was changed when the consumptive was branded as the subject of tuberculosis. The pure-hearted betrothed no longer wanders under the willows, among the ruins and waterfalls, and she tells the pale young man to go off and undergo the air treatment and overfeeding. Here the clever lady is somewhat behind the age. Overfeeding, happily, is largely a thing of the past. At any rate, the pale young man would not now be forced to eat a Gargantuan feast of pork chops, fat mutton, and so forth, and if his stomach rebelled and he had to leave the table, he would not be brought back and compelled to finish the disgusting meal. The lady does not promise to wait for her lover, and before he is cured she marries a champion athlete. As for him, he is quite likely to find his affinity in a sanatorium.

In *Wits, Beaux, and Beauties of the Georgian Era*, Mr. John Fyvie tells the following story: A certain pompous physician once confided to Foote that he had written a number of poems which he had a great mind to publish, but had so many irons in the fire that he really did not know what to do. "Take my advice, doctor," was the reply, "and put your poems where your irons are."

British Medical Journal.

SATURDAY, MAY 21ST, 1910.

THE PSYCHOLOGY OF THE CONSUMPTIVE.

THAT the mind influences the body is now a matter of familiar knowledge; and that the body influences the mental state is within the experience of every one. The whole purpose of asceticism was to subdue, and if possible kill, the natural healthy instincts of the flesh. St. Francis of Assisi, when nigh his death, came to see that he had been too hard on his body, which he called "Brother Ass." The Turkish lady quoted by Boswell as having expressed the opinion that happiness depended on the manner in which our blood circulates, had a truer insight into the facts of life than the biographer of Johnson, who solemnly condemns the utterance. Yet Bozzy himself had a large experience of the mental depression and remorse which sit waiting for the awakening of a sleeper who has gone to bed drunk. The effects of indigestion on the mind are familiar to most of us. Sydney Smith, who expressed his conviction that "the apothecary is of more importance than Seneca," described them with characteristic humour. The passage is well known, but will bear repetition: "Half the unhappiness in the world proceeds from little stoppages, from a duct choked up, from food pressing in the wrong place, from a vext duodenum, or an agitated pylorus. The deception, as practised upon human creatures, is curious and entertaining. My friend sups late; he eats some strong soup, then a lobster, then some tart, and he dilutes these esculent varieties with wine. The next day I call upon him. He is going to sell his house in London, and to retire into the country. He is alarmed for his eldest daughter's health. His expenses are hourly increasing, and nothing but a timely retreat can save him from ruin. All this is the lobster; and when over-excited Nature has had time to manage this testaceous encumbrance, the daughter recovers, the finances are in good order, and every rural idea effectually excluded from the mind. In the same manner old friendships are destroyed by toasted cheese, and hard salted meat has led to suicide. Unpleasant feelings of the body produce correspondent sensations in the mind, and a great scene of wretchedness is sketched out by a morsel of indigestible and misguided food. Of such infinite consequence to happiness is it to study the body!" Gout must be held answerable for many of the atrocities perpetrated by men invested with absolute power. Experienced doctors can read in the face of a patient the expression of the melancholy engendered by a disordered liver. We all know the peculiar irritability caused by disease about the lower end of the intestinal tract. It may be that every functional disorder or organic lesion of a particular part has a corresponding mental condition; in other words, every disease may have its peculiar psychological coefficient. Could this be accurately determined, the knowledge thus possessed by the doctor would be a most useful help in diagnosis and a potent addition to our means of combating disease.

In a recent issue of the New York *Medical Record*, Dr. Maurice Fishberg has discussed the psychology of the consumptive. He holds that, excluding nervous disorders, there is no chronic organic disease in which the psychical control of the patient is a more essential condition of successful treatment. He says he has seen many cases of tuberculosis on the down grade in which improvement—indicated by gain of weight, recovery of appetite, and mitigation of cough—followed examination by a new physician, who insisted on going through the whole ritual of physical examination in its minutest details, using the *x* rays, the ophthalmic or cutaneous tuberculin test, and examining the sputum and urine in the presence of the patient, but making no change in the treatment. The same directions that had already been given without benefit were repeated but in different words. Dr. Fishberg adds that many consumptives had undoubtedly been benefited by the different kinds of "mind cures" even of the "absent" variety. Physicians, both ancient and modern—among them being such men as Boerhaave, Auenbrugger, Laënnec, and Trousseau—have recognized the psychical factor in the treatment of disease. Dr. Fishberg thinks that the modern materialistic conception of the life and functions of the human body, engendered by the great discoveries made in the domain of physiology and pathology, have diverted attention from the psychic forces of the average patient. "We carefully study the lesions in the lungs of the consumptive; we are able to determine accurately the extent of invasion of the tubercle bacilli, and we form our final judgement on these objective findings, as well as on observations of the pulse, temperature, loss of weight, etc." But few writers on tuberculosis have taken into consideration the mental state of the patient, though many mention the importance of perfect discipline and the influence exerted by the physician. He points out that the attention of medical practitioners has been called to the relation of the nervous system to tuberculosis by the large number of consumptive lunatics, especially in asylums. Clouston has stated that the death-rate from tuberculosis among the insane is three times that among the sane of the same ages. As far back as 1863 that author made a special study of the relation of insanity to tuberculosis, and he concluded that there was a form of insanity so distinct in mental symptoms and clinically so characteristic of consumption that it might be termed "phthisical insanity." There is much difference of opinion whether insanity predisposes to tuberculosis or tuberculosis to insanity, but it is significant of the close connexion between the two diseases that modern improvements in the hygienic conditions of lunatic asylums have not, as far as we know, materially reduced the mortality from tuberculosis among the inmates.

Another proof of the influence of the nervous factor in pulmonary tuberculosis is the prevalence among consumptives of neurasthenia and hysteria in their various manifestations. But apart from insanity and other definite mental disorders, commencing phthisis finds expression—in many cases before any physical signs are discernible—in changes of character and in an exaggerated tendency to emotional disturbances. Every one who has had much to do with consumptives must have been struck by their selfishness. This often makes the care of them in their homes an almost intolerable burden, and it is a frequent cause of trouble in sanatoriums. More than any class of invalids they are to themselves the centre of the world. They spend their time noting the minutest variations in their symptoms; they can

hardly speak of anything else. They shrink from the slightest sacrifice of their comfort. Their only thought is to cling on to life. There are of course beautiful instances of a wholly different character; but these are exceptions to the general rule.

In close relation to the selfishness of the average consumptive is his amazing optimism. It is not by any means universally true of mankind that "Hope springs eternal in the human breast"; but it is true of the consumptive. He is always getting better and forming plans for the future. The ordinary consumptive would never say, as the famous wit said, referring to the cheering assurances of his physicians, that he was dying of a multitude of favourable symptoms! The optimism characteristic of pulmonary tuberculosis may be the outcome of a judgement disabled by disease. The consumptive finds it hard to believe that he is doomed, and goes from doctor to doctor, and if he has the means, from one health resort to another. He reads the literature on tuberculosis which flourishes with such rank luxuriance in these days, and is the easy prey of every vendor of a new "cure."

Another psychical characteristic frequently noted in consumptives is eroticism, marked sometimes by a sickly sentimentality. An illustration of this is to be seen in the case of Sterne. There is good reason to believe that Byron's charge that the author of the *Sentimental Journey* wept over a dead donkey and allowed his mother to die of starvation is unfounded. But it is certain that Sterne's philanderings with women were in some cases not altogether Platonic; indeed, we have his own confession, expressed with characteristic coarseness in one of his letters, that his desires were for something more sensual than sentiment. The sexual erethism of the consumptive often shows itself in frequent indulgence, with selfish indifference to the feelings or danger of the other party. On the other hand, pietism of a peculiar type is frequently associated with tuberculosis. This does not make the patient less exacting in his demands on all about him.

We have already referred to the effect of the mental factor in speaking of the eagerness with which consumptives fly to quack cures. A curious illustration of the influence of suggestion is quoted by Dr. Fishberg from Albert Mathieu. That physician announced to his patients that a great discovery had been made in the shape of a new serum which positively cured tuberculosis, and he gave it the fine-sounding name "Antiphymose." He selected his patients carefully, examined them minutely, and noted daily the results produced by the treatment, which actually consisted in the injection of a few centimetres of physiological salt solution. The patients were greatly impressed with the new remedy, and the favourable results exceeded all expectations. After a few days' treatment he noted an improvement in the appetite, a diminution in the temperature, cough, expectoration, and night-sweats, and even an improvement in the physical signs. The patients began to gain in weight, ranging from 1,500 grams to 2 and 3 kilograms. As soon as the injections were discontinued, all the old symptoms reappeared.

Rénon accounts for the general uniformity of results in records of cases treated in various ways—especially such as have an element of novelty or mystery about them—by attributing it not to the drug or other mode of treatment, but to the influence of psychotherapy.

It may be well to point out that, even if this explanation be accepted, it leaves untouched the system of strangling the disease in its cradle, which is one of the most striking results of modern scientific research.

ANAPHYLAXIS.

THE term "anaphylaxis" was invented by Richet[1] in 1902 to describe the curious property possessed by certain poisons of increasing instead of diminishing the sensitiveness of the organism to their action (ἀνά, backwards; φύλαξις, protection). The property is really an inverted immunity, and escaped notice for many years after the study of poisons that diminish the sensitiveness of the organism to their action, and evoke immunity on injection or are prophylactic, had made great progress. Richet's work was done with venins derived from the tentacles of certain common sea anemones. He was able to extract from these two venins; one, which he called "thalassin," was a complex crystalline amine, producing intense itching when injected into the dog, and conferring a relative immunity—acting prophylactically—on repeated injection. The other, named "congestin," was an albumin, producing intense congestion of and haemorrhages from the gastro-intestinal mucous membrane on injection, and on repeated injection increasing the sensitiveness of dogs to its action. Thalassin causes congestion of the skin, Congestin congestion of the viscera; and Richet at first regarded the two as an antitoxin and a toxin occurring side by side in the sea anemones. Using a highly toxic congestin extracted from mussels, mytilocongestin, he found that a second injection of it into dogs might find them from five to twenty-five times as sensitive to its action as to the first injection, a typical instance of "anaphylaxis."

To explain this anaphylaxis he supposes that the first injection slowly gives rise to the formation of neither a toxin nor an antitoxin, but of a third substance, which he proposes to call a "toxogenin." The toxogenin exists in the serum, and can be found in quantity there, roughly speaking, between the sixth and the fortieth days after the first injection; after that period anaphylaxis disappears and prophylaxis (or acquired active immunity) takes its place. The toxogenin he believes to exert its anaphylactic action by combining with the small dose of toxin introduced in the second injection, and thereby producing a still more active poison called an "apotoxin." Professor Richet is a teleologist, and holds that anaphylaxis is Nature's method of accelerating the reaction of the organism to the toxins, bacterial or otherwise, particularly when these toxins are administered in small doses. It secures a prompt and vigorous reaction, the rapid production of antitoxins, while the bacterial attack is still feeble, and paves the way for active immunity.

Professor Richet's toxogenin is apparently identical with the "anaphylactin" of certain American pathologists, and is an innocuous substance. Some of it is to be found in the serum, but no doubt much is fixed to the cells—presumably to the cells of the nervous system. There is naturally great variation in the ease with which different toxins produce anaphylactic phenomena not only in different kinds of animals, but also in different animals of the same species. Thus, cocaine probably occasions anaphylaxis in rabbits, but not in the guinea-pig; apomorphine in some dogs, but not in others. The relation of the toxogenin

[1] *Physiologie.* Travaux du laboratoire de M. Charles Richet. T. vi: Anaphylaxie, alimentation, toxicologie. Paris: F. Alcan. 1909. (8vo, pp. 514, with numerous figures and diagrams.)

produced by the first toxin injection to the antitoxin that gradually replaces it, and is found alone some three or four months later, is at present quite obscure.

So far Professor Richet, who has had the advantages of working with toxins easily prepared in large quantities, and of using the lower animals for his experiments. Few of the many other writers and workers on anaphylaxis have been so fortunate and successful in their results and in the explanations they have to offer. Friedberger explains it as an albumin-antialbumin reaction taking place *in vivo*; Hartoch believes it to be a precipitin reaction, and connects it with deviation of complement; terms such as "anti-anaphylaxis," which, as has been elsewhere remarked, no fellow can be expected to understand, have been freely invented and used. The names of distinguished men of science have been introduced into the question. Thus the "Theobald Smith phenomenon" is the name given by Otto (1906) to the hypersensitiveness to horse-serum shown by guinea-pigs that have already been used for the titration of antidiphtherial serum. Arthus (1903) was the first to record anaphylaxis for serum, and accordingly Marfan has described the very threatening pseudo-phlegmon that sometimes appears within a few hours at the site of the injection of serum into the human subject as the "phenomenon of Arthus." The unnecessary multiplication of new terms that characterizes modern scientific progress has been actively carried on in anaphylaxis, and Richet's "toxogenin," in which he recognizes Gay and Southard's "anaphylactin," has already been also described as "sensibilisin" by Besredka, "lysin" by Nicolle, "zymogen" by Vaughan and Wheeler, "antibody" by von Pirquet and Schick, "anaphylactic antibody" by Weil-Hallé.

In the lower animals anaphylaxis exhibits itself usually in the form of severe and sudden phenomena; death may occur within a few moments of a minute second injection of serum in a perfectly healthy animal, or may be postponed for some hours or days. In man, sudden death following very soon after a serum injection is by no means unknown, and has in several instances been attributed to anaphylaxis. Certain experimenters, however, argue strongly against this view. Weil-Hallé and Lemaire, for example, go so far as to state that the deaths attributed to antidiphtheritic serum-therapy will not stand criticism, and that serum-anaphylaxis in man gives rise to transient phenomena only, and never to dangerous or permanent consequences. They argue that the only anaphylactic phenomena observed in man are skin eruptions, pains, malaise, slight fever, or local reactions; and point out that the best way of avoiding them is to give large injections of antiserum, rather than small ones, whenever it is necessary to give second or later injections during the period when anaphylactic manifestations are to be expected. It is clear, therefore, that some uncertainty still attaches to the exact scope of anaphylaxis in human beings. Rapid or sudden death after a serum injection may undoubtedly occur in both man and the lower animals, and it is perhaps not unreasonable to assume that the mechanism whereby this death is brought about is the same in the one case as in the other. Be this as it may, however, it is at any rate satisfactory to find that the mass of theory that surrounds the subject of anaphylaxis has given birth to some important practical advice as regards serum treatment. And that is, that after a patient has received one serum injection, any second injection should be made with caution and should be massive rather than small; anaphylaxis first shows itself ten or fifteen days after the first serum injection, but may be elicited after that by any injection given later, and may persist for at any rate as long as nine years in specially sensitive patients.

THE PELLAGRA FIELD COMMISSION.

A TELEGRAM, dated May 13th, from Dr. Sambon, now in Italy in charge of the Pellagra Field Commission, conveyed the information that "the Commission has definitely proved that maize is not the cause of pellagra; the parasitic conveyer is the *Simulium reptans*." The information contained in the telegram is satisfactory so far as it goes, but we are without information as to the proofs, which no doubt will be forthcoming. The maize theory has been so long an accepted belief that if Dr. Sambon has done nothing more than direct attention to other possible causes of pellagra only good can come of it. Dr. Sambon in his investigations states that the *Simulium* is found wherever pellagra prevails, but whether the connexion between the disease and this fly has been shown either experimentally or bacteriologically we are not yet in a position to state. Captain Siler, United States Army, who accompanied Dr. Sambon in the early part of the work of the Pellagra Field Commission, delivered an address before the Committee in London on May 11th, 1910. He bore eloquent testimony to the arduous work done in Italy by the Field Commission, and strongly urged the continuance of the investigation on the lines which were forecast by Dr. Sambon before he left England. The Committee hopes to be in a position to carry out Captain Siler's suggestion. The investigation is at present being carried out on purely epidemiological lines, a plan of campaign which requires investigation over a wide field of infection, involving much travelling, interviewing, inquiry, and sifting of evidence. This can be accomplished only by expenditure of money on a liberal scale, and as the funds at the immediate disposal of the Committee are wellnigh exhausted, it is to be hoped that an inquiry so promisingly begun and so zealously pursued will not be called to a halt for lack of a few hundred pounds.

INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, 1911.

A MEETING of hygienists, as announced in the BRITISH MEDICAL JOURNAL of April 30th, was held at the Hotel Cecil on Thursday afternoon, May 5th. Sir William B. Leishman was voted to the chair. In the course of his opening remarks the Chairman stated that since the preliminary meeting the preparations had been proceeding, and he found that the organization promised to be still more extensive than he had thought. He dwelt on the general arrangements which were being made, and then called upon the Secretary, Mr. H. W. Armit, to report on the actions which he had taken since the first meeting. Mr. Armit briefly related that negotiations with H.M. Government had now reached a stage when the support of the Board of Trade had been promised and the Governments of the self-governing Dominions and India were being addressed with the view of participating in the exhibition. He then read a list of names of ladies and gentlemen who had been invited to attend the meeting and of societies which were being approached to nominate delegates to serve on the British National Committee. The lists for the colonies were not yet complete, but he was in communication with prominent colonials for the purpose of selecting

persons who would adequately represent colonial hygiene. It was then proposed by Dr. Edridge-Green that the ladies and gentlemen whose names were on the lists be elected *en masse* to the British National Committee, and that the Committee have the power of co-option. This was passed *nem. con.* The Secretary then read a second list of experts in each branch in hygiene, classified according to the groups of the exhibition. This list was intended for the purpose of forming an executive committee. The Secretary explained that he thought that it would be possible to avoid many meetings of the committee by having it large and representative, and by asking the members to allow him to consult them at their homes or institutions on matters requiring expert advice. The action taken in response to this advice or the suggestions put forward could then be submitted to the other members of the committee through the post, and time and trouble could thus be saved. After a few additional names had been added, the Executive Committee was elected with power of co-option, the co-opted members to become *ipso facto* members of the National Committee. The number of members on the National Committee was 271 and on the Executive Committee 121. Among the names of the National Committee the following may be mentioned: The Countess of Warwick, the Presidents of the Royal College of Physicians of London, of the Royal College of Surgeons of England, of the Royal College of Physicians of Edinburgh, of the Royal College of Surgeons of Edinburgh, of the Faculty of Physicians and Surgeons of Glasgow, of the Royal College of Physicians of Ireland, of the Royal Society of Medicine, of the Chemical Society, and of St. John Ambulance; Sir W. Church, Sir Lauder Brunton, Sir William Collins (Vice-Chancellor of the University of London), Dr. Kenyon (the Chief Librarian of the British Museum), Sir Walter Goschen (His Majesty's Ambassador in Berlin), Dr. Whitelegge, Dr. Newman and Dr. Newsholme of the Home Office (Board of Education and Local Government Board respectively), Sir W. Leishman, Sir Patrick Manson, Sir Shirley Murphy, Professor Osler, Surgeon-General Pollock, Director-General Porter, Sir R. Douglas Powell, Sir H. Roscoe, Sir E. Thorpe, and Sir W. Thompson. The Secretary was instructed to approach H.R.H. Princess Christian, who had intimated that she would require to have the list of the Committee submitted to her before she agreed to join it, to ask her to act as Patroness. He was further instructed to approach a certain number of prominent patrons of science with the view of one of them accepting the post of president, and others, including Sir Alfred Keogh, Sir William Treloar, and the presidents of the various colleges of surgeons and physicians, for the vice-presidents. The meeting terminated after a hearty vote of thanks had been passed to the Chairman.

THE MEDICAL PROFESSION IN SOUTH AFRICA.

IN view of the position of the medical profession in South Africa, to which we have drawn attention on several recent occasions, it is satisfactory to be able to note that an attempt is being made to lay the foundation of a better state of things before the four South African colonies fuse into one. Certain resolutions which have been under the consideration of branches of the British Medical Association and other medical bodies in different parts of South Africa should, if it prove possible to get their principles established by law, secure a much better form of machinery for the treatment of medical questions in the future Commonwealth than at present exists in any one of its component states. These resolutions, four in number, emanated originally from the Transvaal Medical Society, and a propaganda in favour of the principles underlying them is being actively carried on by Sir Kendal Franks and others. The first two propose that a minister holding a portfolio of public health, either alone or together with some other portfolio such as that of education, should be one of the responsible ministers of the Crown under the central Government of United South Africa, and that a principal medical officer of health for South Africa should be appointed, and, under the responsible minister, be the administrative head of the department thus established. The other two resolutions propose that on questions other than those referring to the public health the Government should be under an obligation to consult the President of the General Medical Council, and that when provincial governments have under their control hospitals and similar institutions their establishment, maintenance, and management should be entrusted to a board which includes an adequate number of medical men. The disposition to regard these resolutions with high approval seems general in all medical quarters, the only differences of opinion relating to minor points, such as what questions precisely should be dealt with by the Government in consultation with the President of the General Medical Council, and whether it would not be better that there should be two responsible administrative officers under the Minister of Public Health—one charged with matters relating to the public health pure and simple, and the other with those of a general professional kind. Arrangements have also been made for the holding of a conference between the existing medical councils of each of the four colonies, in order that they may be ready to put forward jointly suggestions as to the constitution, duties, and powers of the General Medical Council for the Commonwealth; the opinion is generally and strongly held that such Council should mainly be composed of elected members, and that in any case an elected member, and not a Government nominee, should be at its head. Things, therefore, are moving satisfactorily so far; but it has to be remembered, of course, that even should the medical profession get its own way in all the directions indicated, something further will be required to secure against attack the dignity and prosperity of its rank and file. Unless they have some such organization as the British Medical Association at their back, individual medical men must always be comparatively helpless when dealing with either public or private employers of labour on a large scale.

THE "ANTIVACCINATION GERM KILLER."

MISS BEATRICE E. KIDD (Secretary British Union for Abolition of Vivisection, 32, Charing Cross, S.W.) writes with reference to an article which appeared under this title in the JOURNAL of May 14th: "Why the above title should be given to a remedy, whether real or 'quack,' merely because its proprietors selected the *Vaccination Inquirer* as an advertising medium, is hardly apparent to those not guided by prejudice According to this argument, Holloway's Pills might be called a 'Liberal Remedy' and Mother Seigel's Syrup a 'Tory Nostrum' indiscriminately. But I notice that because the advertisers made use of certain statistics investigated or compiled by Dr. Hadwen, you take the opportunity of associating his name with a quack remedy. Dr. Hadwen being abroad, I trust you will allow me to write for him in order to point out to you that if his statistics showed that 'the cases coming under the Crimson Cross ointment treatment during the Gloucester epidemic showed a lower mortality-rate than those

otherwise treated,' that fact does not make him responsible for the suggestion that the ointment was all that its inventor claimed, but only for the proof that other treatments were worse." We think Miss Kidd would have been spared this outburst of resentment if she had taken the trouble to read the article in question a little more carefully and had secured a copy of the advertisement to which she refers. The first point in her criticism is vitiated by absurd fallacy, owing to an altogether erroneous assumption on her part that the title to which she takes exception was given "merely because" the proprietors selected the *Vaccination Inquirer* as an advertising medium. It was not the medium selected, but the advertisement itself, which suggested a title the appropriateness of which should be apparent to any one not blinded by prejudice who had read the paragraph along with the "documented" article in another part of the JOURNAL. A remedy advertised as a simple solution of the vaccination question, which claims to be a germ-killer, curing and preventing small-pox, and with statements said to have been investigated and compiled by the President of the Antivaccination League and one of the most pronounced medical antivaccinists of the day, might surely be called "The Antivaccination Germ Killer" without wounding Miss Kidd's susceptible feelings, unless she fears there is some inhumanity in the killing process. Incidentally we may point out to Miss Kidd that Holloway's Pills, if advertised as a simple solution of the Veto question, might properly be called a "Liberal Remedy" or a "Tory Nostrum," according to which political party puffed them. The other item of Miss Kidd's criticism refers to Dr. Hadwen, whose name appears in the advertisement and in our comment. If Miss Kidd objects to Dr. Hadwen's name being associated with what she calls a quack remedy she must remonstrate with him, and not with us, for the association had continued long before it was mentioned in the JOURNAL. We may further point out to Miss Kidd that the suggestion of making Dr. Hadwen responsible for all the "inventor claimed" is hers and not ours. Whether self-constituted or authorized to act as Portia for Dr. Hadwen, the advocacy of Miss Kidd is remarkably feeble. Even Dr. Hadwen must feel that the quality of her mercy is a trifle strained. Her letter completely misses its aim, and does nothing to extricate Dr. Hadwen from the position in which he is placed by the association of his name with a quack remedy in a prominent advertisement repeated over a considerable period of time.

SHIP SURGEONS.

THERE has reached us from far-away Australia a cutting from a February issue of a London newspaper, sent on with a request that attention may be drawn to the inaccuracy of a statement therein relating to ship surgeons. This is to the effect that most steamship lines pay their medical officers so generously that unless the services rendered have been of quite an exceptional character there is no reason why any passenger should acknowledge them by the tendering of a cheque. The generosity of the pay is, of course, a delusion. It varies between £6 and £10 a month, the latter rate being practically restricted to one or two of the very best lines. In either case the pay hardly does much more than cover the incidental expenses of a voyage, for these in the case of a medical officer commonly mount up in a most unexpected way. Besides supplying himself with uniforms and making additions to the medical and surgical outfit of the ship of things he may consider necessary, but which are not on the list officially approved, he is often involved in a good deal of expenditure in connexion with unavoidable shore-going expeditions, has to pay wine and washing bills, and finally bestow sundry tips, notably on the "boy" told off to assist him in his work and look after him personally. However abstemious a medical officer may be, his wine bill almost inevitably rises quickly if he is a popular man on board, while washing bills on ships whose captains pride themselves on the turn-out of their officers sometimes reach a surprising amount. Nor is there anything in the nature of a sinecure about his post. He always has a certain amount of professional work to perform daily, while should there be any case of serious illness or accident on board, or an outbreak of infectious disease, the capabilities of the ablest man may be tested to the utmost. There is also a social side to the ship surgeon's work. He is expected to take the head of a table, get up games and amusements, pay special attention to passengers who might otherwise feel neglected, and generally understudy the captain in the character of host. The work, in short, calls equally for medical and surgical knowledge, social ability, and endless tact, for the medical officer has to contrive to please everybody, from the captain downwards, and this is not always readily compatible with fulfilment of professional duty. On the whole, therefore, the pay can never be considered generous, while there is a multiplicity of passenger vessels which never make even a pretence at payment. They depend on the gratuitous services of medical men who hope to cover their expenses by fees tendered them. It is an expectation that is usually falsified; for a considerable proportion even of saloon passengers do not apparently feel under any obligation to remunerate the surgeon, however much trouble they may have given him. The sea has an immense attraction for many men, and but for this fact it would be impossible for steamship companies to secure medical officers on the terms named. As things are, they have to make their choice between those who like a roving life and, having a certain amount of private means at their back, are indifferent to financial results, newly qualified men, and practitioners who, either from weakly health or other causes, are unable to settle down on shore. Their choice would probably be wider if it were frankly recognized that free medical attendance is not one of the advantages proffered by steamship companies in return for passage money paid, and if the managers of companies, instead of merely allowing their medical officers to receive fees when offered, authorized them to make a charge to any first and second class passengers requiring their attendance, according to an approved scale.

LABORATORY RESEARCH BY WOMEN.

WE learn from *Science* that the Naples Table Association for Promoting Laboratory Research by Women announces the offer of a fifth prize of £200 for the best thesis written by a woman, on a scientific subject, embodying new observations and new conclusions based on an independent laboratory research in biological, chemical, or physical science. The theses offered in competition are to be presented to the executive committee of the association, and must be in the hands of Mrs. Ellen H. Richards, Massachusetts Institute of Technology, Boston, Mass., before February 25th, 1911. The papers will be judged by a board of examiners, or by such specialists as they may choose. The board of examiners consists of Dr. William H. Howell, Dr. Theodore W. Richards, and Dr. Albert A. Michelson. The first prize was awarded to Florence Sabin, B.S.Smith, 1893,

M.D.Johns Hopkins University, 1900, for a thesis on the Origin of the Lymphatic System. The second prize was awarded to Nettie M. Stevens, B.A., M.A., Leland Stanford University, 1899, 1900, Ph.D., Bryn Mawr, 1903, for a thesis on a Study of the Germ Cells of *Aphis rosea* and of *Aphis oenotherae*. The third prize was awarded to Florence Buchanan, D.Sc., Fellow of University College, London, for a thesis on the Time taken in the Transmission of Reflex Impulses in the Spinal Cord of the Frog.

SIMULATION OF TUMOURS BY MEANS OF PARAFFIN INJECTIONS.

PARAFFIN, as is well known, has been used with success by surgeons to disguise deformities of the nose, and we believe it is employed by some beauty specialists to obliterate wrinkles. It is not surprising, therefore, to hear that it has been employed by some ingenious persons to produce swellings simulating tumours. In a recent number of the *Annales d'Hygiène* we find reports of two cases by a Russian doctor, M. Violine. In one, a young soldier complaining of varicose veins on the left leg, was admitted to the military hospital at Smolensko, where there were discovered not varicose veins but large tumours of cartilage-like consistence situated under the skin and in the soft parts of the leg. Two of these tumours were so large as to interfere with the wearing of boots. An ossifying myositis was diagnosed, and the man was invalided. Soon afterwards there came to the hospital a new recruit with similar lesions. The coincidence excited suspicion, and the patient was placed under observation. Under the integument and the soft parts of the right leg were seven tumours, two of which as large as a hen's egg, occupied the outer surface of the leg, three were at the level of the ham, and two smaller and flattened ones were situated on the inner side. These tumours, which were of cartilaginous hardness, could be moved with the skin, and to a certain extent were movable in the underlying parts. They were painless even on strong pressure, but by this means it was found that the tumours changed in shape, as if they were made of wax or paraffin, and that they kept the changes so produced after pressure had ceased. It was suspected that they were artificial tumours caused by the subcutaneous injections of vaseline. When it was proposed to excise one of them for examination the soldier refused to submit to the procedure. The following method was then adopted to verify the diagnosis: A flat zinc pan, used for making applications to the abdomen, having been filled with hot water, it was placed successively on each of the tumours, each of which after a very few minutes changed completely in shape and remained very much flattened. These two cases are by no means isolated. Other authors, among whom may be mentioned Goldenburg, Kustner, and Raptchevski, have reported cases of tumours produced by paraffin, some of which simulated elephantiasis of the scrotum or large exostoses of the upper limb.

MEDICAL PRACTITIONERS ABROAD.

MOST of our readers have probably had more or less practical reason for recognizing that the agents of the Inland Revenue Department are exhibiting this year something more even than their wonted energy in the matter of income tax requisitions. In a general way it is a circumstance to which none of us will be disposed to object, since the more faithfully income tax laws are put into force, the wider is the incidence of the tax, the greater the total collected, and the better the chance of the poundage claimed in future years being reduced to something more like peace-time proportions. Indeed, from this point of view it has sometimes seemed to us in former years that the collectors might well have been less pressing in their attention to those who sooner or later in the year must inevitably make returns, and devoted more energy to hunting out those who commonly escape entry in collectors' books at all. There are, for instance, thousands of permanent residents in hotels, boarding houses, and private apartments who are never worried by a demand for a return at all; still more important, there are hundreds of comparatively wealthy men, who, living in rooms and having no other permanent address than some club, escape payment of all income tax other than that deducted by distributors of dividends. This year, however, the net seems to be being cast more widely, and is entangling in its meshes—at all events, in isolated instances—a certain number of medical men who practise abroad and merely visit London for purposes of relaxation. Such of them as have a known address in this country are, it appears, being directed to hand in forthwith a full account of their income and of the sources from which it is derived. It is, of course, right that these medical men should pay income tax on any property they possess in this country, as also, like other folks, on dividends received by them from companies having their head quarters therein; and possibly it is just that if they have a domicile in England at all they should pay income tax on sums acquired abroad. But that is a very different matter from subjecting them to the same form of inquisition as that to which medical men who practise in this country unfortunately have to submit. It is one of the most searching character, and in some instances surveyors express themselves as not satisfied with the particulars supplied and demand to see books themselves. The point thus raised is one of some degree of novelty, and the principle underlying it can apply to very few persons outside the medical profession. Indeed, what that principle is would seem to be somewhat a moot point, nor do we know that it is held to be inherent in the income tax laws by the surveyors of more than one district. With a number of examples before us, each furnishing an exact statement of the individual's professional position, the extent to which he resides in England, and the arrangements he makes as to quarters in this country, it might be possible to ascertain whether the principle is upheld by the Imperial authorities and in what circumstances its application could successfully be resisted. We should be glad, therefore, to hear from any medical man interested.

AMERICAN SOCIETY OF TROPICAL MEDICINE.

THE seventh annual meeting of the American Society of Tropical Medicine will be held at the Medical School of the St. Louis University, St. Louis, Missouri, on Saturday, June 11th, 1910, under the Presidency of Colonel W. C. Gorgas. Amongst the subjects proposed for discussion are the following: Uncinariasis (Dr. Charles Wardell Stiles, Washington); the prevalence of hookworm (Dr. C. C. Bass and Dr. John C. Gage, New Orleans); a study of the type of infantilism in hookworm diseases (Dr. Isaac Ivan Lemann, New Orleans); a comparative biological study of the amoebas cultivated from liver abscesses of man (Dr. M. Couret, New Orleans); the ipeca treatment of intestinal amebiasis (Dr. Walter Brem, Cristobal); pellagra (Dr. C. C. Bass, New Orleans); the cultivation of the *Bacillus leprae* upon artificial media (Dr. C. W. Duval, New Orleans); *Strongyloides intestinalis* with larvae in the sputum (Dr. John G. Gage, New Orleans); a summary of cases of malaria and of cases suspected to be malaria

examined in the past three years (Dr. John M. Swan, Watkins, N.Y.). The following papers will be read by title: Has the American occupation of the Philippines demonstrated that the tropics is a suitable place of residence for the white man? by Dr. Victor G. Heiser, Manila; the campaign against yellow fever in the Mexican Republic, by Dr. Edouardo Liceaga, Mexico City.

THE DIAGNOSIS OF TRACHOMA IN EMIGRANTS.

THOSE whose function it is to examine immigrants and emigrants and to decide from simple inspection whether or no trachoma be present have, indeed, an unenviable task. Increased experience, so far from rendering the problem simpler, only introduces fresh complications. Dr. J. Sandos Fernandez, of Havana, made this question the subject of a paper which he read to the Medical Congress of Rio de Janeiro, and which is translated in the *Recueil d'Ophtalmologie* for September, 1909. Every ophthalmic surgeon who has had much experience of trachoma will agree with the author in his conclusion, that in many cases it is quite impossible by simple inspection to say that a man is or is not suffering from trachoma. In all marked examples the diagnosis is easy, more especially when the changes in the lids are associated with pannus. The author does not mention the presence of the so-called sago bodies, or rice grains, as of diagnostic import, although many surgeons, especially German surgeons, state that trachoma does not exist without them (*Kein Trachom ohne Körnchen*). Experience in the East, however, teaches that very many well-marked and obvious cases of papillary trachoma do not show these bodies. Papillary hypertrophy is found in lids which have been exposed to the weather, with infection with diplobacilli, and in many other inflammations. Doubtful cases should be kept under observation, and the result of treatment noticed. The microscope does not afford much help. Holberstädter and Prowazek, and later Graefe, have described cell inclusions which are almost certainly typical of trachoma, but at present the technical details are too complicated to render their detection of diagnostic value. Histological methods show no changes sufficiently characteristic to warrant a differential diagnosis. The conclusion is that there is a large number of borderland cases in which a definite diagnosis of trachoma cannot be made with any degree of certainty. Such patients should be kept under observation, and the result of treatment watched.

THE EFFECT OF MERCURY ON THE SERUM REACTION OF SYPHILIS.

THE value of the Wassermann-Bruck-Neisser reaction in the diagnosis of syphilis is becoming generally recognized, and the serum of patients is being subjected to the test extensively. Uniform results are not always obtained by the various investigators, owing, in all probability, to the modifications of the original method which have been introduced. That this is the case is clearly shown by the varying percentages of positive reactions which have been met with in the various stages of the disease. But even if one definite method were universally adopted and all investigators were to utilize exactly the same technique, the reaction could not be regarded as one which is simple to interpret. The large majority of cases of syphilis yield a positive reaction, just as the large majority of persons who are free from syphilis give a negative reaction. The exceptional positive reactions when no syphilis exists need not detract from the real value of the reaction, since a certain number of conditions are now recognized in which a positive reaction may be met with, such as scarlatina, yaws, etc., and the investigator and the clinician will not readily fall into error in such cases. Negative reactions in doubtful cases require much more careful consideration, and in this case no definite cut and dried formula can be set up. Experience must be relied upon to determine whether a person who is known to have suffered from syphilis years before is free from the disease when the reaction proves negative. A much more awkward limitation to the test is produced by the transformation of a positive into a negative reaction by treatment with mercury. If this transformation were synchronous with cure, the test would gain considerably in value, but this does not appear to be the case. Citron registered the fact of the transformation without deciding whether the metal itself in some combination interfered with the reaction, or whether it interfered with the production of that substance which causes the complement in the serum to be deviated. In view of the practical importance of a sound theoretical knowledge on this subject, Dr. August Brauer has investigated this problem in Professor Klingmüller's clinic in Kiel.[1] After considering previous work on this subject, he comes to the conclusion that there are three possible explanations of the action of the specific treatment in syphilis. In the first place, the mercury could render the serum haemolytic; in the second, it could destroy or paralyse the substance in the serum which deviates the complement; and in the third place, it could act directly on the production of the substance which deviates complement, or even on the virus itself. It was easy to exclude the first explanation. More difficulty was met with in deciding between the two remaining. His investigations showed that a positive reaction may be met with in a patient who is excreting mercury extensively, while a negative reaction was met with in other cases in which there was little or no excretion of mercury. Again, he found cases in which a negative reaction became positive in spite of the presence of considerable quantities of mercury in the blood. He even found that the serum of a patient which was previously able to yield a positive reaction gave a negative reaction as a result of mercury treatment, and subsequently gave a positive reaction in spite of the persistence of mercury in the system. He then attempted to decide the action of the particular combination of mercury in the serum on the deviating substance. This experiment, however, does not appear to us to be convincing. He added one volume of the mercury containing serum which had been found not to deviate complement to one volume of a deviating serum which was free from mercury, and then tested the deviating power. As the power was not ascertainably altered, he concluded that the mercury in this particular combination was incapable of acting on the substance which causes the deviation. But it must be pointed out that if an action on the part of the mercury in destroying or chemically altering the substance which causes the deflection of the complement existed at all, this action would only be likely to be exerted when the active free mercury ions are claimed by the protein of the serum and thus converted into complex ions. After the chemical reaction is complete no further effect on the deviating substance would be probable. However this may be, it appears that there is argument in support of Dr. Brauer's contention that the mercury does not act directly on the deviating substance. He points

[1] *Muench. med. Woch.*, April 26th, 1910.

out that clinical experience shows that the reaction does not always become negative under the influence of thorough mercurial treatment, and, in fact, that the effect of treatment on the reaction varies widely. He was further able to show that the mercury content of the organism does not stand in any direct relationship to the reaction. He therefore deduces that mercury attacks the virus itself and not the substance which deviates complement, and that the effect on the reaction is at best an indirect one. If this be true, the ultimate effect must be that of removing this power of deviating if mercury can kill the *Spirochaeta pallida*. So long as any of the virus is still resisting the action of the parasiticide, so long is there a possibility of a renewed appearance of deviating substance; but once the last of the race has been dealt with, the reaction must become permanently negative. Time must show whether this is so.

THE SCHOOL NURSE'S LOT.

JUDGING from an account of a recent meeting of the Devon Education Committee in the *Western Morning News*, there is room for further beneficent labour on the part of a certain poet of musical and magisterial fame, still living. In some beautiful lines familiar to most of us he called attention to the unhappiness of the policeman's lot, and by diagnosing the causes thereof did something towards alleviating it. Those for whom we invite further exercise of his skill are school nurses, and more especially one in the neighbourhood of Paignton. We are so far able to assist him as to point out that one of the principal duties of a school nurse is to deal with lice-infested heads, and this in certain cases entails paying visits to the houses of pupils. Even though such visits, like those of angels, are few and far between, there is a tendency to confusion between accepted methods of dealing with guests; unless accompanied by a policeman, the Devon county nurse sometimes finds herself sped on her arrival instead of her departure, and this makes the performance of her duties difficult. In addition, some of her more ardent admirers send her billets-doux, of which the following sample was read at the meeting in question: "I now write you these few lines to let you know I am capable of keeping my own children's heads clean without your help. I have had six children go to school, and never had no complaint before for this last thirty years, and if there is any more of your impudence I shall see further into it." Another correspondent, a man, wrote promising to comb the nurse's hair if he got hold of her, a particularly generous offer, as he simultaneously declined a corresponding service on her part towards his own children. A third but less forward correspondent contented himself with writing a letter on the subject of the nurse's visits to a teacher at one of the schools with which she was connected: "I shall certainly object to any examination of my children to encourage such a waste of public money. In my opinion, better by far the doctor examined the mental faculties of the promoters of this scheme or provide furnished apartments for them at the Devon and Exeter Asylum. I hope you will be good enough to forward this to the authorities responsible for such tomfoolery."

A COMMITTEE for the study and prevention of cancer has been formed in Switzerland under the presidency of Professor Tavel, of Berne. The committee is affiliated to the International Cancer Research Committee, on which it will be represented by two members.

IT is stated that Professor Max Verworn of Göttingen has been called to Bonn as successor to Pflüger in the Chair of Physiology.

IN the note on our present Gracious Sovereign King George V published in the BRITISH MEDICAL JOURNAL of May 14th, it should have been stated, in referring to his interest in the medical profession and the honour he has always been ready to show it, that he is an Honorary Fellow of the Royal College of Surgeons of England, having been elected on February 11th, 1909.

IN the procession which accompanied the body of the late King from Buckingham Palace to Westminster Hall on May 17th, places were assigned the following members of the medical department of His Majesty's Household: Three Physicians in Ordinary, Sir Douglas Powell, Sir Francis Laking, and Sir James Reid; two Physicians in Ordinary, Sir Alan Manby and Dr. Bertrand Dawson; the Sergeant Surgeon, Sir Frederick Treves; two Honorary Surgeons, Mr. Godlee and Sir Alfred Fripp; the Surgeon-Oculist, Sir Anderson Critchett. Dr. Spitta, bacteriologist, had a place in the procession. One of the Gentlemen Ushers, Mr. Arnold Royle, C.B., was formerly a medical officer of the army, and was afterwards medical attendant to His Royal Highness the late Duke of Albany. The following members of the medical department of the household of King George V, as Prince of Wales, also had places in the procession: Dr. S. J. Gee and Sir R. W. Burnet, Honorary Physicians; Sir Havelock Charles, Physician in Ordinary; and Mr. H. Mallinson Rigby, Surgeon in Ordinary.

EN AVANT.

(Friday, May 20th, 1910.)

Pass on, O King! to thy reward,
  Be thine the gain, as ours the loss;
The empty scabbard, flaming sword
May work for service of the Lord,
  Yet wert thou warrior of the Cross
By ways of peace, and that pure path
That shows no blood-stain'd aftermath.

Thy faith in men was Faith of thee,
  Their devious coils of meaner mood,
Thy winnowing gifts of courtesy
And understanding charity
  Made straight to lines of rectitude;
Too proud to fence by petty wiles,
Thou taught'st the world to win by smiles.

And if upon the viewless Shore
  The dreams we dream by faith and creed
Be holiest fact; if human lore
Expand to knowledge evermore
  And glimmering light be Light indeed,
Thou wilt not know, O King once ours!
The irony of wasted hours,

Since, where thy human Kingship moved,
  Thy sympathy of sane intent
Went out to those whom Christ beloved!
The "stricken field," where helpless roved
  The wounded of Time's Covenant,
Thy tireless vision, pitying, saw,
And seeing, pitied by Love's law.

G. H. R. D.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER AND DISTRICT.

MIDWIVES' PROTEST AGAINST THE MIDWIVES ACT AMENDMENT BILL.

THE midwives of the Manchester district last week held a meeting in the Memorial Hall, Manchester, to protest against certain provisions in the Midwives Bill recently introduced in the House of Lords by Viscount Wolverhampton. Mrs. Lawson, President of the National Association of Midwives, presided, and said that if the bill were allowed to pass as it stands it would put back the midwifery profession two centuries. Midwives were already supervised to an alarming extent, and this bill would carry supervision still further. They were told that great difficulties arose in the rural districts, where there was often a shortage of midwives. The fact was that in the rural districts there were often not enough cases to maintain a midwife, and the obvious solution of the difficulty was State aid; but the bill in question made no provision for any State subvention. They had also a grievance against the composition of the Central Midwives Board. The bill proposed to enlarge the board from nine to thirteen members by adding representatives of the Local Government Board, the Association of Municipal Corporations, the Society of Medical Officers of Health, and the British Medical Association. Midwives were supposed to be represented by the Incorporated Midwives Institute, and in future the members appointed by the Midwives Institute and the Royal British Nurses' Association must be certified midwives, but the Midwives Institute was not at all representative of the working midwives of the country, and they had a right to claim direct representatives on a body to whose regulations they had to conform. The bill also proposed an alteration with regard to the fees paid to doctors called in by midwives in cases of emergency. At present in Manchester the fees were paid by the local supervising authority, and the doctor was always sure of obtaining his fee from the Town Hall, but Lord Wolverhampton's bill proposed to make the fee payable by the boards of guardians. In that case the relieving officers would be sent to make inquiries, and she knew something of the methods of relieving officers. Under present arrangements investigations were made with skill and tact, but the relieving officer would have to work differently and would be forced to ask impertinent questions. The midwives would then be blamed for sending for the doctor, which necessitated the visit of the relieving officers. They would in fact be blamed for doing what the law required them to do, and that would affect their employment. Another point was that the new bill made no provision for raising the standard of training of midwives, though the National Association of Midwives desired a higher and better training for midwifery.

One of the speakers said that the bill was a gross insult to the intelligent trained midwife, and it was urged that as no one but a working midwife could know the conditions under which they had to work, they had a right to proper representation. The following resolution was put to the meeting and carried unanimously:

> That this mass meeting of midwives protests against the adoption of a bill which does not give full representation on the supervising authorities and on the Central Midwives Board to working midwives, the persons most concerned in the decisions of these authorities.

Protests have now been made from at least four quarters against the provision of Lord Wolverhampton's bill that boards of guardians should be responsible for medical fees. The evidence of the British Medical Association before the Departmental Committee was in favour of payment by the local supervising authorities. This has since been supported by the Manchester Corporation in its circular to municipal corporations; Mrs. Sidney Webb, representing the National Committee for the Break-up of the Poor Law, is emphatic in condemning the pauperizing tendency of payment by boards of guardians, and now the National Association of Midwives complains that the provision would act injuriously on midwives themselves. Thus practically all the persons most concerned ask that the bill should be amended in this respect.

BIRMINGHAM.

SPECIAL SCHOOLS AND INSTITUTIONS FOR PHYSICALLY AND MENTALLY DEFECTIVE CHILDREN.

IN the report for 1909, showing the work accomplished by the Education Committee, an important account is given of the working of the special schools for physically and mentally defective children. There are 11 special schools, 7 for mentally defective, 2 for physically defective, and 2 for deaf children. The average number of children on the roll during the year was 1,029, and of these 743 were mentally defective, 201 physically defective, and 85 deaf. The number of teachers employed was 59, and nurses and attendants 10. Very careful notice is taken of all children approaching the age of 14 years, as periodical examinations are made of these children every six months. As a result, a decision is arrived at in each case as to whether the child may safely be allowed to leave school on actually attaining that age, subject to a satisfactory situation being obtained, or shall continue to attend until the legal age for exemption from a special school is reached—namely, 16 years. Scholars who are nearing the age of 16 years are specially observed, and if it be felt that they are likely to need institutional care and treatment after leaving school the respective boards of guardians in whose areas they reside are notified, and the parents advised to make application with a view to their children being admitted into some suitable colony or institution.

Each year the evidence is becoming clearer that the majority of the mentally defective need lifelong care and control, and that a great number of the cases can only be dealt with satisfactorily in industrial colonies. The statistics of the After-Care Subcommittee show that out of 307 feeble-minded persons who have left school and are still alive, and whose whereabouts are known, only 34.8 per cent. are earning wages at all, and only 5.5 per cent. are earning as much as 10s. per week. The percentage of wage-earners would probably have been considerably lower if the number "lost sight of" could have been included in the figures, as a recent investigation proved that the latter belong to a class that are rarely in remunerative employment. Of 64 deaf persons, 40 are earning wages averaging 11s. 5d. per week, and of 68 cripples, 15 are receiving wages, averaging 4s. 9d. per week. During the year 1909 the number of Birmingham children in residential institutions for the blind was 51 (25 boys and 26 girls); in residential institutions for the deaf, 6 (all boys); in residential institutions for epileptics, 9 (4 boys and 5 girls); and in residential institutions for the mentally defective, 46 (19 boys and 27 girls). These are only a small percentage of those who ought to be under control in a residential institution.

WALES.

CARDIFF CHILDREN.

DR. E. WALFORD, Medical Officer to the Cardiff Education Authority, in his annual report for 1909, reviews at length the hygienic conditions prevalent in the schools, which, he says, are in the newer ones very satisfactory. Proceeding, he says: "Artificial or mechanical ventilation has not been adopted in any of the elementary schools. In many of the older class rooms closed iron stoves, with iron smoke flues passing through the wall or roof, were found. Acting upon my advice, these have nearly been substituted. Such stoves have been found at times quite red hot, and

emitting noxious fumes from the iron of the stove and the fuel used. They in no way assist ventilation, and are at all times liable to foul the air to a dangerous extent." Dr. Walford also states that he has issued instructions to teachers and parents for dealing with infectious diseases, and explains the system adopted for the medical inspection of the children. The examination is conducted in accordance with the schedule prepared by the Board of Education, and no attempt is made at a complete clinical investigation unless the condition of the scholar is such as to indicate the necessity for further examination. As a rule, the examination of each child occupies on the average five minutes, time being saved by the previous entry on the inspection card of the necessary particulars relating to the history of the child. The scholars inspected numbered 12,503, comprising 1,661 boys and 1,314 girls leaving school, 4,599 of both sexes entering school in the infant departments, 4,374 scholars about 7 years of age, 490 who were referred by the teachers and school attendance officers for special examination, 37 mentally defective children, and 28 children attending oral school for deaf children. Eighty per cent. of the boys examined were found to have normal vision, and 53 per cent. of the girls. There is some reason to believe, proceeds Dr. Walford, that the mere medical inspection in itself has resulted in some considerable improvement in the condition of a large number of children. The occasion has been regarded by some parents as one of importance and somewhat in the nature of a "review," and their children have evidently received special care and attention with a view to a creditable appearance on the day of inspection. This has been more marked amongst the girls, and particularly among those about to leave school. This improvement is doubtless in some cases only temporary, but in others it has been continuous, and in such cases it is largely due to the combined efforts of the medical inspectors, school nurses, and teachers. Unsuitable food and want of cleanliness and attention to the teeth seem to be the chief causes of dental caries, a condition which ultimately leads to many cases of serious physical deficiency. Of the infants of both sexes examined 3.40 per cent. were found with more than four decayed teeth. Of the boys entering 55.3 per cent., of the boys leaving 26 per cent., of the girls entering 44.6 per cent., and of the girls leaving 21.3 per cent. had defective teeth. Adenoids and enlarged tonsils and ringworm seemed to be somewhat extensively prevalent, and 68 children suffering from ringworm were excluded from school; 273 cases of scarlet fever were notified, and 103 of diphtheria. Special attention is paid to the defective and epileptic children attending the school at Virgil Street, but Dr. Walford fears that some of the benefits of this special school are lost owing to the difficulty of exercising any supervision over the children after leaving. After-Care Committees have been formed for this purpose, and in his last report Dr. Eichholz, H.M. Inspector of Special Schools, says: "An After-Care Committee is urgently needed for the various schools which train afflicted children in Cardiff. At present there is no agency to help in avoiding the educational loss which is bound to occur at the moment when children leave school and try to find places for themselves. A helping hand at this time will in a great many cases make the difference for many pupils between pauperism on the one hand and a life of self-respect and partial or total independence on the other."

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Women Students' Petition.

The Glasgow University Court has received a petition from the women students asking the court to open to them the systematic classes in medicine and surgery as well as the other medical classes at present closed to women, and also desiring the court to assist the women students to gain admittance to the Western Infirmary. They find the distance between the college and the Royal Infirmary a great handicap, preventing them from taking certain classes or compelling them to lose part of their clinical tuition. The court decided to appoint a committee to report on the matter, but it is extremely unlikely that anything will be done in view of the position taken up by the court in reference to the scheme to institute the new professorial chairs at the Royal Infirmary, the systematic tuition of which is to be open to students of either sex.

Edinburgh Post-graduate Vacation Course in Medicine.

The programme for the Edinburgh Post-graduate Vacation Course in Medicine in connexion with the University and Royal Colleges, which will extend from Monday, September 5th, till Friday, September 30th, has just been issued. There will be a general course, with a composite fee of five guineas for the four weeks or three guineas for either the first or second fortnight; a surgical course, limited to twenty-five members, with a composite fee of ten guineas; special classes, the fee for each being one guinea; and a daily lecture on some subject of general medical or surgical interest. Accommodation and board may be obtained in one of the residences of the University Hall, and early intimation should be made to the secretaries, Messrs. Whitson and Methuen, C.A., 21, Rutland Street, Edinburgh. The honorary secretary for the course is Dr. Edwin Bramwell, 24, Walker Street, Edinburgh; and the acting secretary Mr. John Stirton, the University, Edinburgh.

Glasgow University Court and the Medical Curriculum.

Considerable discussion took place at the meeting of Glasgow University Court on May 12th regarding an ordinance for degrees in medicine of St. Andrews University. Principal Sir Donald MacAlister, who presided, said that they had carefully gone through the ordinance along with the draft ordinance which expressed the general wishes of the conference of the four universities, and he suggested that they should make a formal objection to the words "or diminishing," which, if passed, meant that by an internal regulation the minimum curriculum could be diminished by regulation. This ought not to be done by one university, but only by an ordinance of a general kind. Dr. McVail also raised strong objection to the alternative suggested, of "biology" in place of "botany" and "zoology" in the curriculum; but after prolonged discussion it was agreed, on the motion of the Principal, to give notice of objection to the words "or diminishing," and to leave the biology matter for St. Andrews University to decide for itself. The consideration of the Glasgow draft ordinance submitted by committee was left, after discussion, to an adjourned meeting to be held on May 18th.

Glasgow Weather during 1909.

A pamphlet has been prepared by the Superintendent of the Glasgow Corporation Parks containing the meteorological notes compiled from month to month during the year 1909 at Queen's Park, with a general account of the effect of the meteorological conditions on vegetation in and around the city. These prove most interesting reading in view of their bearing upon public health and the atmospheric conditions in large towns. Owing to prevailing easterly winds, heavier rainfall, and severer frosts, together with an absence of bright sunshine, the average temperature was lower than in previous years. The "fog fiend" was frequently experienced, and the fogs of November and December were the worst that have occurred for a long series of years. The effect on plant life in the environs of the city was unusually bad. At best the atmosphere of the city is inimical to plant life, and is not tending to improve. When fog comes in addition it becomes a serious concern to those who have the care of plants. Such reports as appear in this

pamphlet should go far to still further impress the citizens in our towns with the necessity of pushing forward the crusade with regard to air purification in the interest of the health of the community. Human beings cannot be expected to thrive in conditions that prove fatal to plant life and growth.

PHTHISIS NOTIFICATION IN GLASGOW.

Some idea of the difficulties in the way of the eradication of tuberculosis in our towns may be had from the reply given to a question last week in the Town Council of Glasgow. The report for the previous fortnight stated that there were 579 cases of phthisis notified living in their homes, and a question was asked as to the details of the conditions in which these cases lived. The reply showed that for the period from the adoption of notification till March 31st there were 81 patients living in houses of one apartment, the average number of people per house being 2.78; there were 229 in houses of two apartments, the average in these cases being 4.27; there were 90 in houses of three apartments, average 6.14; and 46 in houses of four apartments and upwards, with an average of 5 per house. Another inquiry showed that in Cowcaddens district, which is under the special observation of the Health Department with a view to removing the causes, the people in a special area of 13,000 square yards live 550.6 to the acre, but excluding streets, 929.4 per acre, as against the average 63 persons per acre for the whole city; that the infantile death-rate in this area is 230 per 1,000, as against 131 for the city; that diseases of respiratory organs cause a death-rate of 9.5 per 1,000, as against 3.5 for the city; and that of the total 443 houses in the area, 126 are illegal in one or more apartments.

PURIFICATION WORKS AT GIFFNOCK, GLASGOW.

The new sewage purification works at Giffnock, near Glasgow, were formally opened on May 7th, and are the first to be designed in Scotland to meet the recommendations of the Royal Commissioners—the sewage to be completely dealt with up to three times the dry weather flow. The works are entirely bacteriological, with septic tanks and bacteria filters of the percolating type. The septic tank effluents are distributed over the circular filters by means of the Adams hydraulics revolving sprinklers. There will be no chemical or mechanical action as at Glasgow; aërobic and anaërobic bacteria completing the whole process. The only supervision required is the third of a man's time oiling bearings occasionally and cleaning the arms of the sprinklers.

RAG FLOCK AS BEDDING.

Glasgow Corporation at a meeting on May 5th passed a resolution submitted by the Health Committee, expressing satisfaction at the issue of the Blue Book by the Local Government Board of England on rag flock and its use for bedding and upholstering purposes. The resolution also expresses the hope that the Government will give early facilities for the introduction of a short bill providing for the prohibition of the sale to the public of unwashed rag flock for these purposes. The sanitary inspector for Glasgow, Mr. Peter Fyfe, has taken a leading part in bringing to the front the dangers of the use of unwashed rag flock to the public health, and a letter on the subject was submitted by him to the Health Committee when drawing attention to the above mentioned Blue Book.

THE PURIFICATION OF THE RIVER CLYDE.

With the completion of the main drainage scheme of Glasgow, as reported in the JOURNAL of May 7th, the question of the River Clyde purification enters on a new phase. Interest is now centred on the attitude which will be adopted by the burghs of Paisley and Renfrew, which discharge their sewage into the Cart and Pudzeoch tributaries of the Clyde. Paisley Town Council, at the time of the inception of the southern part of the Glasgow scheme, decided not to join in the Glasgow proposals, but to adopt some plan of its own. Since that time, eight or nine years ago, the matter has been practically shelved. The necessity of facing some scheme sooner or later is admitted, but the cost is a serious matter. The idea most favoured is to have intercepting sewers on each side of the river Cart to convey all the sewage to purification works north of the town—that is, between the town and the river Clyde. The cost of this scheme would, it is estimated, add 1s. per £ to the rates, which are already very high. Three years hence some relief will be experienced by the expiration of the 3d. per £ guarantee rate for Cart navigation purposes, and by that time experience of the Glasgow scheme will have been gained. Urgency, so far as public health is concerned, is not admitted by the local authorities; but as Glasgow is also concerned—the Clyde being a tidal river for some miles further up than the junction of the Cart—and has powers of compulsion, the matter will have to be decided probably before that date.

Renfrew is at present considering schemes for the purification of its sewage ere reaching the Clyde via the Pudzeoch; and, as the financial aspect of this question is not so serious, a satisfactory solution is anticipated at no distant date.

VAGRANCY IN SCOTLAND.

An interesting report has just been issued by the Scottish National Society for the Prevention of Cruelty to Children. The report states that there has been a noticeable decrease in the number of cases of mothers found drunk in charge of children, the number of such convictions in Glasgow being now as 1 against 5 formerly. This, the report states, may be attributed to the Children Act, which prohibits persons from taking children into public-houses. The company of children is, no doubt, often the means of preventing women going into public-houses.

The society has now a staff of 42 inspectors stationed at 27 centres of population engaged in looking out and protecting ill-treated and neglected children. The number of cases dealt with during the year was 7,514, involving the welfare of 22,224 children. Cases of ill-treatment and assault numbered only 180 as compared with 6,262 cases of neglect and starvation, and "this appears to indicate that cruelty to children in Scotland arises more from want of thought than want of heart."

Attention has been given to the problems presented by the children of vagrants, tinkers, tramps, and others of the itinerant classes. It was estimated that at the end of November there were 361 families with 913 children then living out of doors. Of these, 109 families lived in vans, 197 in tents, and 55 otherwise, chiefly in sheds, outhouses, and a few in caves. The children whose parents had vans were fairly comfortable, and mostly attended school. Few of the children who lived in tents were found to be getting any education, and their lodgings were often of the most miserable description. The society's inspectors were warning vagrants of their duty to the children, and good results had already followed. To enable the society to keep vagrants under supervision a new system had been adopted of circulating among all the district branches information of the society's dealings with such cases. The system was working well, and promised to be of much value.

The children of the vagrants who are receiving elementary education may under the Children's Act be committed in industrial schools. "This," the report says, "would be a most valuable power in many cases, but we regret to say it is in the meantime rendered inoperative, as no adequate financial provision has been made for the maintenance of such children. It is greatly to be desired that a sufficient Treasury grant be made for these cases, so that children may be saved from a life of vagrancy, and get the industrial training and education of which they stand in so much need."

After referring to the present methods of dealing with offending parents, the report states that there remained "a residue for whom imprisonment had no terrors, and who on release immediately resume their former life and commit similar offences over again."

Such cases point to a lack in our penal system that calls for reforms. There is a consensus of opinion that habitual criminals required prolonged detention in a labour colony under circumstances which would alike be penal and reformative. In no class of cases would such treatment be of more benefit, or is it more urgently needed, than in cases of continued neglect and ill-treatment of children.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

OFFICERS' TRAINING CORPS.

AN important step has lately been taken in connexion with student life in Dublin by the establishment at Trinity College and at the Royal College of Surgeons of contingents of the Officers' Training Corps—an organization which it is hoped will provide the nation with a trained and efficient reserve of officers in cases of national emergency. Already 200 men, many of whom are medical students, have been enrolled at Trinity College, and about 70 men at the College of Surgeons. Apart from the national advantage, it seems likely that the individual gain to medical students who become members of the corps will be considerable. Many students now feel themselves debarred from taking an active part in athletic games during the course of the professional year, but now, with a minimum expenditure of time, probably not more than a couple of hours weekly, they will be enabled to obtain regular and interesting exercise. In addition, in the senior division experience of field ambulance work can be obtained, and members who have completed their training will be allowed a certain bonus of marks if at any time they decide to compete for any of the medical services. The establishment of the contingent in Dublin owes much to the energy of Professor Campbell Geddes, who was one of the first, in an article five years ago in the *University Review*, to point out the advantages of training university men to constitute a special reserve of officers.

ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS.

A meeting of this new association was held last week in the Gresham Hotel, Dublin, for the purpose of electing council and officers for the ensuing year. Numerous letters were received from Fellows of the college expressing approval of the association. A council of twenty members was elected and the following were appointed officers for the years 1910 and 1911: President, Lieutenant-Colonel Adye-Curran; Vice-President, Edward Charles Thompson; Honorary Secretaries, Robert P. M'Donnell, 20, Lower Leeson Street, Dublin, and Andrew Charles, 64, Harcourt Street, Dublin; Honorary Treasurer, James Caleb Powell, 30, Harcourt Street, Dublin.

HEALTH OF LURGAN.

Dr. Agnew, the Medical Superintendent Officer of Health for the Lurgan Urban Sanitary District, has just issued his annual report on the health of the town. The average birth-rate was 26.8, a fall of 4 from that for the last ten years; and the average death-rate was 19.6, a fall of 0.2 from that of the last ten years. The zymotic death-rate was 1.3. Lurgan early seized the opportunity of adopting Part I of the Tuberculosis Prevention (Ireland) Act, so that phthisis became a notifiable disease; but the limitations imposed by the Act and the subsequent Orders of the Local Government Board have greatly hampered its usefulness; 19 out of every 20 cases which now come under the Act are already known to the dispensary doctor who is also the medical officer of health. In connexion also with the establishment of tuberculosis dispensaries the Act is defective. An interesting epidemic of scarlatina occurred during the month of April, 1909; this Dr. Agnew traced to a boy who was actually peeling from scarlatina after a mild unrecognized attack carrying white work and handkerchiefs to and from a factory for domestic employment. A list of the outworkers of the factories was obtained, and a list of the customers of a suspected dairy. Dr. Agnew was able to isolate all suspected cases, to stop all out or home work with the help of the factory owners, and to stamp out the epidemic without interfering with the sale of the milk. Infant mortality was only 91 per 1,000 births, and this low figure Dr. Agnew assigns to the fact that only about 10 per cent. of the children are bottle-fed. Dr. Agnew urges further school hygiene and the erection of better housing for the working classes.

Correspondence.

SICKNESS AND INVALIDITY INSURANCE.

SIR,—Having read the recent articles and correspondence in the JOURNAL with great interest on the above subject and Poor Law reform, I hope a few remarks are not out of place.

Changes will soon take place which will affect us for better or worse for the remainder of our professional career, and that being so, care should be taken that no agreement which would affect the entire profession should be entered into without the whole profession being sounded on the matter. As far as I can see there are four alternatives before us:

1. A State medical service open to all medical men who wish to enrol.
2. A municipal or county medical officer competing against the general practitioner (as in Minority Report scheme).
3. A medical service organized by the British Medical Association on the contract service system.
4. A medical service organized by the British Medical Association on the payment per visit system.

To the general practitioner No. 2 would hardly be acceptable for obvious reasons, yet it was the scheme put forward in the Prevention of Destitution Bill which was favourably received in the House of Commons.

No. 3, a scheme for which is put forward by the British Medical Association in the BRITISH MEDICAL JOURNAL of May 7th, would not, I believe, be acceptable to the vast majority of general practitioners, though the scheme is an improvement on the present system of contract practice; it would, as Dr. Fothergill says, "confirm the position of the profession as slaves," and, as Dr. Gough says, is "about the worst system for the average general practitioner which could be devised," and, at the same time, the worst for the public. Do not the General Medical Council look with askance on such practice?

No. 1, a State medical service, would, I think, be far more acceptable than an extension of contract practice; and a medical service backed by the State, with hospitals and pathological laboratories forming part of one system of public health, both preventive and curative, it would be a vast step in advance beyond the present day haphazard methods.

No. 4, I believe, also would be acceptable to the majority of medical men, and there is no reason why a medical service on the payment-for-work-done system could not be organized. The system works well in the National Deposit Friendly Society, and many of its members have not much over £1 a week; thrift is encouraged, and the patients can get treatment from whatever doctor they wish, paying at rates not below the dignity of the profession. Any doctor who has patients on the contract system on the National Deposit system would not, I think, have much hesitation in voting for the latter. The scheme roughly sketched out by Dr. P. R. Cooper in the issue for May 7th seems excellent.

I humbly make the suggestion that the British Medical Association have a Referendum and refer certain questions to the *whole* profession—whether members of the British Medical Association or not—individually, as many members, especially in the country, can seldom attend the Association meetings; that the opinion of every registered practitioner in Great Britain and Ireland should be sought on the question of contract practice and payment for work done system (as in National Deposit

Friendly Society), or whether a public medical service would be preferable to either; that appropriate questions should also be asked with regard to medical treatment of school children. The outlook is grave, but we have in our own hands the making of the future, whether one of degradation, as contract practice is, or of freedom and self-respect. We are face to face with what has been aptly described as a national emergency, but we can be, if all agreed, masters of the situation.

It was with a feeling of great uneasiness that I read the contract system scheme in the JOURNAL; but it is surely incredible that the recognized heads of a great profession should leave *sweated labour* as an inheritance to the next generation, or that they should recommend what one might call "the pat on the back and bottle of medicine system" as the best possible. Would it not be cutting off the multitudes from the benefits of diagnosis and treatment learnt by modern research? Would it not be degrading to set up a new class of professional hacks knowing yet unable to use such scientific methods?

Long Eaton, May 16th. ERNEST H. M. MILLIGAN.

SIR,—I am entirely in agreement with Dr. Cooper that, in any medical service under State sickness insurance, payment of medical fees in direct proportion to work done is much preferable to the ordinary club system of payment per head per year; but I am afraid that in trying to find safeguards against unnecessary visits, Dr. Cooper has overlooked some points that will be regarded by the State as essential. The deposit system of the National Deposit Friendly Society is satisfactory only for short illnesses, and would utterly fail to meet insurance requirements if a long illness or invalidity occurred, seeing that when a member's private deposit was exhausted, he would lose all claim for further medical attendance. What would then happen? It is suggested that the deposit might be renewed either by charity or the Poor Law, but the one essential object of compulsory insurance is to make a permanent provision, and absolutely to prevent any need for recourse to charity or the Poor Law. The insurance would certainly be considered to have failed in its main intention if either charity or the Poor Law had to be invoked to eke out the insurance, and I cannot believe that any Government would ever consent to medical attendance depending on the chances of a private deposit lasting. Besides this, if the members knew that the deposit might be renewed by charity or the Poor Law, they would argue, "What does it matter if my deposit does get exhausted; it will be renewed somehow or other, and I might just as well have all the attendance I can get?" Thus the whole safeguard against unnecessary attendance would be lost. On the contrary, if medical attendance were made in any way less eligible when the deposit ran out, self-respecting members would be afraid of calling in a doctor, even when it were advisable, and any deterrent influence of that sort might have serious results, especially in cases of early phthisis. Thus, as it is under the Poor Law, the worthless people would still demand, and get, unnecessary attendance, while the self-provident would be deterred.

Neither can I agree with the suggestion that all visits over two a week should be at a reduced rate if the illness lasted over a certain time. This savours too much of paying by results or of imposing a fine on the doctor for not curing the patient sooner. More than one visit on the same day might, perhaps, be at a lower rate, as it often is in private practice.

By far the most practical suggestion, which is actually carried out in France, is to appoint medical supervisors, and this ought to go a long way as a guarantee against unnecessary visits. So thoroughly do I agree with Dr. Cooper as to the advantages of payment in proportion to work done, that even if the Government insists on payment by contract, I still think a pooling arrangement might be made which would remove the system as far as possible from ordinary club work, and I would suggest the following tentative scheme.

Statistics of some hundreds of clubs, with over 40,000 members, show that on a wide average each club member receives four to five visits and consultations per year. Allowing 2s. to 2s. 6d. for each attendance would mean, say, 10s. a year for each member. This is a great advance on the ordinary 4s. club, but it must be remembered that under compulsory insurance the members would not have to pay the whole premium themselves, as they do now. Employers would be paying part, and the State would be giving assistance, so that 10s. is not excessive. If the insurance premium is to be a percentage on wages, it would not be unreasonable to ask more than 10s. for those receiving the higher wages and paying higher premiums. Moreover, if medical inspection of persons not actually sick is added to the duties, as Dr. McVail suggests, the rate would have to be increased. I would then have the central office of the British Medical Association organize in every district local medical committees which would receive the capitation fee for each person compulsorily insured. At the beginning of the year each person insured would have to name the doctor he wished to attend him for the year from among all the medical men of repute in the district. Notice would be sent to each doctor, and if he did not within, say, a fortnight decline, he would be understood to accept as his patients those who named him. There would thus be choice of doctor for patients and liberty on the part of the doctors. Each person insured would have a book of vouchers, something like the *carnet à souche* in France, and at every visit or consultation would give the doctor one of the vouchers. At the end of the year the doctor would present all his vouchers signed to the local medical committee, which, with the aid of the medical supervisor, would scrutinize them and divide the total money in hand among the doctors in direct proportion to the work actually done by each. As already stated, the sum of 10s. is calculated to allow about 2s. to 2s. 6d. for each attendance, taking an average year, but it would, of course, be less for each attendance in bad years and more in good years. In this way, while the Government would be paying the local committee at a contract rate of 10s. per year for each person insured, the individual medical man would be receiving payment in proportion to work done, and the question of unnecessary visits would no longer affect the public, but only the medical men among themselves. The expenses to be subtracted would be very little. In existing provident dispensaries from one-sixth to one-fourth of the total income goes to the management, such as paying the salaries of collectors, but there would be none of this under State insurance, if it is worked as in Germany, as employers are responsible for collecting subscriptions, deducting the workman's share from his wages, adding their own share, and paying the total into the local insurance office, which might be the post office. Neither ought there to be any expenses for drugs. The capitation fee should be clear, and it would be better both for patients and doctors that the insurance department should, as in France, contract with chemists to supply medicines to the prescriptions of the doctors. The business of the local medical committee would be mainly to divide the fees, to settle disputes, and perhaps to fix a rota of doctors for any dispensary that the insurance department might establish at its own cost for the insured.

I hope the Association will not take up a *non possumus* attitude on this subject. I see no chance of abolishing contract practice in every form; we might just as well confess that we have too many obstructives inside the profession and too great forces against us outside the profession to hope for that at present, though it should be our ultimate aim; but I do see a chance of whittling contract practice down to harmlessness. Medical attendance is practically certain to be one of the benefits demanded by the State for the 12 to 16 million persons to be compulsorily insured, and if we deal directly with the Government department it ought not to be impossible to obtain a businesslike arrangement not founded on any false philanthropy, and as far removed from ordinary club practice as possible. But if we place unreasonable obstacles in the way the State will simply leave medical attendance to be provided by innumerable small works' clubs or friendly societies as is done in Germany. This is, indeed, the greatest danger of all, as it would perpetuate in a worse form than ever the same competition and underbidding among medical men as occurs in Germany, the baneful effects of which even the British Medical Association, with all its powers, could hardly avert.—I am, etc.,

Salford, May 16th. J. H. TAYLOR.

PUBLIC MEDICAL SERVICE.

SIR,—In the second paragraph of Dr. Keay's letter he points out that there is no provision made for different fees for different classes of patient under the British Medical Association scheme for a public service. It is not a question with the medical profession as to what people can afford to pay—that is a point which will not be left to us to settle. What we have to do is to settle what our fee is to be; it is of no consequence whether the patient is a pauper or a millionaire. The work and skill and attention demanded for his treatment is the same; and it is pretty certain that one fee will be paid, and that it will almost as certainly be the minimum. Is it likely that after the medical profession have been fighting hard to get hold of club appointments at 4s. per annum per head that we shall be offered a capitation fee of 10s. per head? I think we had better settle a scale of fees which will be sufficiently remunerative for a general practitioner to live in decency and comfort, and educate his family, and then leave it to the "powers that be" to settle how much each club member shall contribute to his club.

It will be folly to fix a small fee for "poor persons," and expect richer ones to pay more. The fee fixed will be taken as the "price" at which we are prepared to work, and no business person will consider any other as necessary.—I am, etc.,

Cheshire, May 17th. HENRY EDWARD GOUGH.

THE MEDICAL SICKNESS SOCIETY.

SIR,—This society is of such importance to the profession that I feel no apology is necessary for referring in your columns to the last report, although by the time this letter appears in print the twenty-seventh annual meeting will have taken place.

It is a very discreditable fact to the medical and dental professions, in my opinion, that the average annual increase of membership of this important society has only been 100 per annum. (The total membership of the sickness branch, which is the only branch that takes new members, is only 2,805.) How is it to be explained? There are, of course, several reasons, of which the first is the well known apathy of the profession to looking after its individual interests. Yet no profession requires insurance more, no profession is a more personal one, and every practitioner must know that when he is away for a holiday, or for an illness, the work that comes in is in most cases barely sufficient to pay for a locumtenent.

Another reason is the existence of many insurance societies which profess to give sickness insurance at a low rate, and to which no doubt many men belong, believing that they are perfectly covered for sickness risks, and ignorant until they have had an illness that they have only got an annual contract, which is renewable at the option of the insurance office, and then only will be renewed if a certificate can be given that the illness has been completely recovered from. Certainly there are one or two offices which grant permanent contracts, but these should not be entertained for a small amount, as the premiums are considerably heavier than those of this society, and there are no bonuses.

For this slow development, however, the society must bear a certain amount of responsibility. It has been its policy—a very good one until it was firmly established—to keep down expenses to 5 per cent. of the premiums, an amount which has admitted of but little advertising, and not at all of employment of agents. It is a serious question, in the interest of the profession generally, whether it is not the duty of the society to increase its expenditure with the view of largely increasing its membership. If a large increase of new blood should take place, it would obviously mean a lowering of the average age of the members, and thus a smaller sickness rate, so that the bonuses could probably still be maintained. What, by the way, is the average age of the members?

In this connexion another feature of the report deserves comment, and comment of a not altogether complimentary nature. With commendable candour the investments are put down at length, but the average rate of interest is not stated. It appears to be about £3 5s. per cent. If this is so, compared with the rates earned by the English and Scottish insurance companies—I omit Colonial and American—the rate is poor. The average these companies earn is almost £4 per cent., and it would certainly appear that a larger amonnt might be earned, especially as I note on page 13 that "in the list of assets some of the securities were written down in 1907 and 1908, but some still remain above the present market value, and may need to be written down later on."

Why should not the directors invest in good colonial securities if they cannot get better rates at home? There are many which would return a safe 4 per cent., and an increase of only ½ per cent. in the rate of interest would mean an addition of £1,250 per annum to the society's income to spend on development.

I trust that nothing I may have said may be considered ungrateful to our present directors, who do an immense amount of work for the society absolutely voluntarily, and to whom the thanks of the members are due for, on the whole, an excellent report. I also hope that no one may read this letter so carelessly as to imagine that there is anything wrong with the society in any way, or that he could do better elsewhere; the latter is as impossible as the former would be incorrect.—I am, etc.,

Birmingham, May 14th. E. D. KIRBY.

VOLUNTARY MEDICAL ATTENDANCE ON PAUPERS.

SIR,—In reference to the letter from Dr. Holt in your issue of May 7th, p. 1146, *re* voluntary medical attendance by private practitioners upon paupers, I should like a little space in which to reply. As one of the guardians who dealt with the case, I must point out that there was no question before us of *voluntary* medical attendance on the part of Dr. Holt; on the contrary, it was indicated to us in no uncertain manner by the representative of the applicant for relief who attended the relieving office that he would have to be paid for his services, and full confirmation of this is afforded by a perusal of the whole of his correspondence with the Local Government Board.

I cannot admire the way in which Dr. Holt has placed the case before your readers, since he has had other letters from the Local Government Board which bear more directly upon the case, and to the receipt of which he does not even refer. To Dr. Holt's first letter the Local Government Board reply in stereotyped form that they make it a rule not to advise outsiders in such cases. Dr. Holt then puts the following question:

"Is a person who has become poor and has to seek relief bound to have the parish doctor if he falls ill, even though his own doctor is willing to continue to attend him?" (Note that no mention is made of *free* medical attendance on his part.)

To this question the Local Government Board reply as follows:

"The Board can only state generally that persons who are in need of medical attendance at the cost of the poor rate should be attended by the district medical officer appointed by the guardians, except, of course, in cases of urgency. They are not entitled to select their own medical attendant, and require the guardians to pay the bill sent in by such attendant."

This is a complete vindication of the action of the guardians in sending the district medical officer to the case.

Dr. Holt then informs the Local Government Board that he will attend the patient for nothing—which is an obvious and material alteration of his position—and the reply is that there is nothing to prevent an outdoor pauper receiving gratuitous attendance or charity in any form. Of course there is nothing to prevent it, and I am not aware that anything has been done to discourage, much less to prevent.

I am certain that Dr. Holt's conduct in withholding a part of his correspondence with the Local Government Board will not commend itself to your readers, and one might even be pardoned for using strong language in reference to such an action. He is surely unconscious of the humour of the situation in gravely pointing out to his professional brethren that, by his intervention, they have now the hitherto unheard-of privilege of attending pauper patients gratuitously, and that it carries with it the benediction of the Local Government Board. It is a noble object, but since most men are in the medical profession primarily to make a living, and as they do far too much

work for nothing already, I scarcely think he will find many becoming delirious with joy at the prospect.—I am, etc.,

JOHN BUTTERWORTH, M.R.C.S., etc.,
Chairman of the Oldham Board of Guardians.

Manchester, May 14th.

THE CONFERENCE ON SCHOOL CHILDREN.

SIR,—In reading the report of the recent conference of the Metropolitan Counties Branch and of the medical staffs of the metropolitan hospitals, on the subject of the medical treatment of children found defective, it seems to me that all the speakers, except Dr. Josiah Oldfield, missed the point.

The whole point seems to me to be that this treatment of children is a State matter. It is not a poor man who comes to a doctor, saying, "I am poor; my child is ill; give me of your charity." It is the State, saying, "This child is not growing up strong to make a good citizen. Now, doctor, do your best to give us a strong and useful citizen." That being the case, I maintain that the State should pay the doctor an adequate fee for the work he does.

No one can suppose that any of the money paid by the London Council Council under the present scheme will percolate to the pockets of any medical man.

Why should the State be our worst paymaster? The architects who design schools; the contractors who build them; the teachers who teach in them; even the caretakers who clean them for the London County Council, are all paid fair remuneration. Why should the man who attends to the medical necessities of the children be the only one who is not paid?—I am, etc.,

Bradford-on-Avon, May 10th. HERBERT P. TAYLER.

PROPHYLACTIC TREATMENT OF DIRTY WOUNDS BY TETANUS ANTITOXIN.

SIR,—The note on the above subject by Mr. Lenthal Cheatle in your issue of May 14th calls to mind three cases of tetanus in which one regrets not to have adopted his treatment.

The horrible and, sad to say, almost invariable death in cases of this awful disease makes one who has witnessed it rejoice to learn of any sort of treatment which may prevent it.

In the short period of three years (1901–3) it was my misfortune to have three cases of tetanus occurring in my colliery practice, and in each case injection of antitoxin, as promptly as it could be obtained, was of no avail in the treatment. If it produced any result at all, it was that of causing immediate convulsions of renewed vigour.

In brief, the cases were as follows:

CASE I.—Carpenter. Punctured wound of inner side of instep from a nail in a piece of wood covered with horse-dung from an old wooden stable in process of demolition. Seen first on morning of third day; wound in appearance was no bigger than the average fleabite, and had been hot bathed and poulticed with bread and water. Patient wished to know whether he was fit for work, as there was no pain or discomfort. In the evening, while taking a meal before going to his work, he noticed a stiffness of the jaw, and his landlady, a midwife, sent for a doctor. Dr. W. S. Cowin, now of Ramsey, who then assisted me in my practice, immediately diagnosed tetanus. The patient was put to bed and given chloral and bromide mixture. Antitoxin was wired for and obtained, and injected that night. Meanwhile convulsions suddenly commenced; chloroform was given incessantly. The opisthotonos was of such terrible severity that the patient was bent backward in almost a complete circle. The case went horribly from bad to worse, and ended in suffocation in about twenty-four hours. As the patient was a strong well-built man of 24 years, his condition became a perfect nightmare of fearful contortions.

CASE II.—Collier. Foot caught and held between rapidly moving haulage rope and tram rail. Before the motion of rope was stopped, the first metatarsal was rubbed through almost its whole thickness. Wound at once washed in 1 in 20 carbolic lotion and afterwards 1 in 40. Dressed daily with antiseptics, and was doing well. On evening of tenth day, patient complained of shortness of breath—"like asthma," he said. Dr. Turner (of recent Bargoed explosion heroic fame), who was then assisting me, diagnosed tetanus. Treatment as in last case. The convulsions were not of so severe a character, and chiefly affected the chest and abdominal muscles. Although nourishment was taken fairly well, the patient succumbed in about forty-eight hours from gradually increasing cardiac failure.

CASE III.—Engine boy. Hand caught and crushed between haulage rope and drum of engine. After thoroughly washing with 1 in 2,000 perchloride of mercury, two fingers were removed. Patient went on well for eight days, walking out and taking food well, although he was not a strong lad. On the eighth day he awoke with stiff neck. He was seen early by Dr. Wilson (of Blaengarw) and myself, and treatment was commenced at once and carried out as in the other two cases. The convulsions in this case were less severe still, and patient survived over three days, when he gradually sank from cardiac failure, the convulsions having become much less pronounced and less often.

The course and end of the last two cases irresistibly suggested that the depressing nature of the treatment contributed largely to the final result. I have always concluded from the history of these cases that:

First, horse-dung was the source of the poison, the nail in the first case and the haulage rope in the second and third being soiled by it.

Secondly, as in the first case, early onset meant greater severity, although the wound was very small; and

Thirdly, that the antitoxin injection did no good.

Now I should certainly treat such cases on the lines followed by Mr. Cheatle.—I am, etc.,

Brynmawr, May 16th. J. L. THOMAS.

SCARLET FEVER.

SIR,—Many members of the profession will be grateful to Dr. Bond of Gloucester, as an expert authority on the subject, for his endorsement of the swabbing of the throat with an antiseptic, as recommended by Dr. Milne, in conjunction with inunction of eucalyptus oil or oleusaban, as suggested and practised by my old friend the late Mr. J. B. Curgenven many years ago in cases of scarlet fever. As Dr. Bond observes, "we must still consider the discharges from the throat, nose, and ear" as the main sources of infection.

More than thirty years ago I commenced the use of, and for many years since have employed, the swabbing of the throat in scarlet fever cases with a combination of carbolic acid and tannin, as in the subjoined formula. The value of the tannin adds to the efficacy of the application of the carbolic acid, for its astringency limits, by causing contraction, the area of surface available for absorption, while the carbolic acid is dealing with the infecting organism, the *Streptococcus conglomeratus*.

In the *pre-antitoxin* days I found the same application of signal service in diphtheria as well as in sore throats simulating faucial diphtheria; cases representing, probably, some form or other of streptococcal attack.

The formula I have used, and which I published many years ago, is the following:

℞ Glycerin. acid. carbolici ... ... ʒjss
Glycerin. acid. tannici ... ... ʒxss
Misce ut ft. glycerinum.

It has been shown that the action of glycerine is augmented by the addition of a little water, hence, before swabbing it is well to dip the throat brush in fresh water, shake out the excess, and then mix the carbolic tannin glycerine with the *well-moistened* brush.

Two or three applications in the twenty-four hours generally suffice.

When the tonsils exhibit suspicious patches, it is important to take a swab at once; or, if an antiseptic has been already used, to allow six hours to elapse, after the last application of the antiseptic, previous to taking a swab for the bacteriological examination.

If this examination indicates merely a streptococcal infection, the ordinary medical treatment, *plus* swabbing with an antiseptic, will suffice; if, however, the Klebs-Loeffler bacillus is identified, the use of diphtheria antitoxin supersedes the necessity of swabbing the fauces.—I am, etc.,

H. CRIPPS LAWRENCE, M.D.Durh.

Babbacombe, May 13th.

THE MEDICAL PROFESSION IN INDIA.

Sir,—In the British Medical Journal of February 19th there is a letter on the medical service of India signed "V. P. Gonsalves." The writer has two points to make: First, that local medical men are injuriously affected by not having a larger share of the higher paid appointments in civil hospitals in India. This may be conceded at once; were the better paid posts open to all Indian medical men no doubt they would produce in time men fitted to hold them. Why not, then, throw open all civil billets to them? This brings me to his second point—that to do this would increase the efficiency of the service and of teaching in particular. Here is where I differ from him. Racial prejudice, no doubt. But the situation at present is really summed up in the answer of Sir Harvey Adamson to Mr. Gokhale, to the effect that Government were aware that local medical men desired to be appointed to medical professorships, but they were not aware there was any strong feeling in the country on the subject. The fact is, that Indian medical men are beginning at the wrong end; they want professorships and pleasant billets in the Presidency towns, but they do not want to work up for these through the rough and tumble that the average I.M.S. officer goes through. I quite agree they should have better openings, but they should earn them. Before the needs of the private practitioner are attended to we should increase the rewards open to the subordinate services, the men who have borne the heat and burden of the day, and promotion should be quicker, merit should be rewarded earlier, and not at the end of a long service.

Dr. Gonsalves does not show how efficiency is to be increased by admitting local medical men to the higher posts. He tries to make out that these posts at present go to notoriously inefficient persons. His case in point of the ten years' Governor's surgeon at Madras becoming a principal of the college is most amusingly unfortunate for his argument. To those who are ignorant of the facts it might appear on paper as if this was a shockingly bad appointment. The facts are that the officers who have acted as Governor's surgeons have since my memory serves almost been the pick of the profession. They have almost always been picked for their professional ability and tact. Later they have one and all got good billets. The officer in question was a splendid operator—it was a treat to watch him—and one of the best all-round medical men I have met, East or West.

As Dr. Gonsalves says, specialists cannot be made by Government order. Specialists are made in India in exactly the same way they are elsewhere, by capable men getting special experience. Who ever trained a specialist? It might be an advantage to bring out men who had made themselves specialists in England or elsewhere, but what pay would they require? The present system is probably as efficient as anything India can afford. You select by a stringent examination the best men the pay you can afford to give will attract, put them through the mill as juniors in a variety of civil and military billets, each calculated to develop certain capabilities, and out of the all-round man when opportunity occurs a few specialists are developed, who are all the better in their special line for a wide medical and general education beforehand. It may not be an ideally perfect system, but on the whole it works well. The long acting appointments when the specialist is away and a junior officer does his work are grumbled at; but this, it must be remembered, is the junior officer's chance. Exactly the same thing happens in ordinary civil hospitals and medical schools at home, only acting appointments are shorter.

The Indian medical man has a claim to obtain gradually a larger share in the Government medical work of his own country, but he does his own cause no good by misrepresenting facts, whether intentionally or from want of knowledge. It must be remembered that the men who are now crying out to be appointed professors are the pupils of the men they wish to replace, and, if their medical qualifications are respectable, it is largely due to the professors they now represent as incompetent. Medically and politically we shall have to give more share in the higher posts, but it is better Indians and Englishmen should clear their minds of cant. What the result in the long run will be no one can say; but it is certain the process must be a gradual one.

A few words in regard to the reserve question: The officers who hold professional billets happen to be liable to be recalled to the army; but they are at the bottom of the list, and would only be called on in a national emergency. It is absurd to say that these posts are sacrificed to the need for a reserve. But the general run of military medical officers in civil employ do form a reserve, and an efficient one; during 1900–1 over 80 officers were recalled for military service either in China or to replace those who had gone to the war.

There are about 730 Indian Medical Service officers, of whom about two fifths are in civil employ—roughly about 300. Any scheme which replaces these men by civilians to any large extent must, unless the efficiency of the general medical service of the country is to be impaired, provide somehow for this reserve. Military medical arrangements cannot be improvised at a moment's notice, though it would be possible to replace Indian Medical Service officers by local men and civilians from England in a time of stress, leaving only administrative officers and a few others to keep the civil medical departments together. This, again, is a matter which can only be settled gradually. Perhaps the local medical men will form voluntary military medical associations—such are being formed at home—and will thus help to form a reserve. In any case, Indian conditions require a Government service, and the type of man required to man this is an all-round doctor and a man. There are a number of local men, and an increasing number, who are approximating to what is required, but they will not be developed by giving over a few fat posts, but by seeing that all who join the provincial medical service go through the mill of hard work first.—I am, etc.,

April 2nd. A Madrassi by Adoption.

CALCIUM CHLORIDE AS A HAEMOSTATIC.

Sir,—In your paragraph on Calcium Chloride as a Haemostatic, in the Journal of May 14th, the following passage occurs:

"In using serum for haemostatic purposes . . . it is obviously important that it should be fresh, as the fibrine ferment which it contains rapidly diminishes by keeping; it may not always be possible to fulfil this condition when it is necessary to arrest haemorrhage without delay, *yet old serum may actually do more harm than good.*"

From this latter statement I beg most emphatically to dissent. One of the quickest and surest ways of stopping bleeding from a gastric ulcer is to give normal serum, or, better still, an antiserum such as antidiphtheritic, and it does not seem to matter how old this serum is. Some of the serums I have used for this purpose were some years old and had been condemned as useless for their specific purpose. Only last week I saw a case of haemoptysis the day after the onset; the sputum was full of bright blood. I gave her 1 c.cm. of antidiphtheritic serum intravenously; the next morning only one nummular piece of sputum was rusty. I then gave her 2 c.cm. of the same serum, and the next day there was no trace of blood in the sputum. This serum was at least six months old. I have mentioned these facts to Professor Collingwood, and we hope to investigate the matter.—I am, etc.,

W. M. Crofton,
Dublin, May 16th. Lecturer in Special Pathology.

DISTRICT AND COTTAGE NURSING ASSOCIATIONS.

Sir,—District and cottage nursing associations are greatly increasing in numbers, and it seems desirable that their relation to the medical men practising in the neighbourhood should be placed on some definite footing. The object of these associations is a good one, namely, to bring within the reach of the poorer classes the advantages of a nurse, whose duties extend to helping in the work of the household when the woman is incapacitated, the nurse at times being resident in the cottage, and at times not so resident. The boon is greatly appreciated by poor people who have once had experience of such help. The accounts of a number of these associations show that they are by no means self-supporting, the subscriptions and fees paid for the use of the nurse by the class for whom she is intended not amounting to half the cost. Hence the deficit has to

be made up by charitable subscription, and the working of the associations is usually in the hands of some resident lady. Many of the nurses are registered midwives, and they will be so in larger proportion as time goes on. These are, of course, subject to the regulations of the Midwives Board, and the question of the fees of the medical man when he is called in by one of them is a matter which appears to be in course of settlement, so that *quâ* midwifery no more need be said except to point out that these are not self-supporting midwives, but midwives kept in a place by the aid of subscription and not themselves receiving the fees paid for their services.

But there is another and more difficult aspect of the matter. These nurses are called in by cottagers to attend to trivial ailments such as would among that class of persons not generally come into the doctor's hands but would be treated at home, such as, for example, trifling burns, abrasions, or what-not. Now the rules of the associations are for the most part carefully drawn up so as to prohibit the nurse from overstepping these limits, but it is obviously not unlikely that an enthusiastic and capable nurse may at times undertake more than she is intended to, and so an insidious form of unqualified practice creep in. And when the nurse declines the responsibility and insists upon a doctor being called in, the question of the payment of his fee is in no way provided for. Though in some places the guardians are friendly to the nursing associations, to the extent of subscribing towards their support, yet the guardians are not liable where the case has not passed through the hands of a relieving officer, and might find themselves afraid to admit the charge. It appears to me that the proper course is for the medical men to preserve a friendly attitude towards the nursing associations, which in some instances they have not done, and so to exercise control over the actual work, which must often be a valuable assistance to them in treating their cases. As I am not in practice, and have never had any knowledge of the conditions of country practice except by hearsay, I do not feel competent to offer an opinion as to the best method of arranging matters, but I think the subject is worth discussing, and hope that this letter may elicit helpful suggestions from your readers.—I am, etc.,

May 11th. F.R.C.S.

AUSCULTATORY FRICTION.

SIR,—As the original discoverer of this method of diagnosis, which forms the subject of an interesting note by Dr. H. H. Brown in the JOURNAL of May 14th, I merely write to say that I quite agree that the method deserves wider recognition.

I described the method with Dr. W. Ewart in the *Lancet* in 1898, and it was while acting as clinical clerk at St. George's Hospital that I happened to make the discovery. I was greatly indebted to Dr. Ewart for his elaboration of the method, and have always found it reliable and of the greatest use. I have often wondered that it has not been described in any of the recent textbooks.—I am, etc.,

ALLAN C. PEARSON, M.B., etc.

H.M. Institution, Borstal, May 16th.

SIR,—We all owe a debt to Dr. Herbert H. Brown for his short paper on auscultatory friction in your issue of May 14th, p. 1168.

I can bear out all he says of his method, but think that vibration auscultation gives better results; this experience of mine may be due to the fact that I have used the old wooden stethoscope in applying the friction method.

The value of the vibration method I learnt about ten years ago from a lecture by Dr. Herbert Habershon at the Brompton Hospital for Consumption. The lecture was soon afterwards published, but in a very much abridged form, in the *Practitioner*. Thus the valuable quotation from the late Professor Tyndall's writings on the acoustics of the vibration method was omitted in the printed lecture. The method is simple and of great value. Thus, if we wish to map out the septum between an upper and a lower lobe of the lung, all we have to do is to listen over one lobe while we hold a vibrating tuning-fork over the other lobe; the fork should have a circular flat base. The one I have used is a rather large one of the note C of the middle of the bass clef. One hears the vibrations distinctly; but directly the fork reaches the border of the lobe over which we are listening, there is heard a startlingly loud ringing sound. Similarly, if we listen over the lobe over which the fork is placed, we suddenly lose the loud sound when the septum is reached.

So enamoured was I of this method that I hoped we might be able by its means to localize intracranial and spinal tumours, etc. A young neurological friend tested these points at my suggestion on a few cases, but his verdict was that it was of no value. Still, I think that possibly a more extended research might give a different result.

It would be of interest if Dr. Habershon would give us in your pages, Sir, his ten years' further experience of the value of vibration auscultation and friction auscultation in clinical medicine.

If I may be critical for a moment, I should like to suggest that the terms "friction auscultation" and "vibration auscultation" are more accurate than "auscultatory friction" or "auscultatory vibration." The commonly used term "auscultatory percussion," too, is a misnomer; it should be "percussion auscultation." To conclude, we have at least four methods of auscultation, namely: (1) Simple; (2) percussion auscultation; (3) vibration auscultation; (4) friction auscultation. Apologizing for the length of this letter,—I am, etc,

London, W., May 14th. LEONARD J. KIDD.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on May 12th, Mr. H. T. Butlin, President, in the chair.

The Death of the King.

It was decided to present addresses of loyalty and of condolence to His Majesty George V and to Her Majesty Queen Alexandra. The text will be found at p. 1250.

Issue of Diplomas.

Diplomas were issued to eighty-eight candidates found qualified for the Membership of the College at the recent examinations, and to thirty-five candidates found qualified for the Licence in Dental Surgery.

National University of Ireland.

As recommended by the Court of Examiners, the examinations of the National University of Ireland were accepted on the same conditions as the examinations of the late Royal University, so far as are concerned candidates who desire to enter for the First Professional Examination for the Fellowship.

The resignation of Mr. G. A. Wright from the Council was accepted as taking effect from July 1st, 1910.

CONJOINT BOARD IN ENGLAND.

AT a meeting of the Comitia of the Royal College of Physicians and of the Council of the Royal College of Surgeons on April 28th and May 12th respectively diplomas of L.R.C.P. and M.R.C.S. were conferred upon the following candidates:

O. J. W. Adamson, F. S. D. Berry, N. W. Berry, D. F. Borrie, R. F. Bridges, L. Buckley, J. S. Burn, R. H. Candy, *N. L. Clarke, W. T. Clarke, F. J. Cleminson, R. C. Clifford, A. K. Contractor, W. R. Cooper, D. M. Cox, R. K. Dadachanji, R. G. Dainty, W. C. Dale, C. A. Dottridge, H. H. Dummere, G. Dunderdale, W. A. Dunn, W. H. F. Eales, S. J. Elkin, R. Ellis, J. T. Fox, F. A. French, L. Game, R. Gamlin, R. W. B. Gibson, C. S. Gideon, P. Hamill, J. C. Harris, R. F. Higgin, A. N. Hodges, E. Howden, S. Hoyte, H. R. B. Hull, R. A. Jackson, R. Jackson, †C. A. Joll, E. H. Jones, P. C. V. Jones, W. F. Jones, F. Kahlenberg, G. G. Lyttle, M. F. Maaz, F. N. H. Maidment, K. D. Marriner, G. Maxted, A. Moir, *A. S. Moorhead, F. Morres, G. E. Neligan, J. H. Newmarch, A. E. Nicholls, H. M. D. Nicoll, C. Noon, E. Nuttall, T. E. Osmond, A. C. Palmer, Miss Dossibai R. C. Patell (Bombay and Royal Free), P. V. G. Pedrick, W. M. Penny, A. Perlman, A. B. Pettigrew, F. O. M. Pfister, A. P. Phillips, F. S. Poole, J. B. Pulling, A. E. Rayner, N. L. M. Reader, A. H. Rolph, J. B. Ronaldson, J. Z. H. Rousseau, F. D. Saner, H. I. Shaheen, N. A. D. Sharp, W. Shipton, R. G. Smith, R. W. Starkie, R. S. S. Statham, T. D. M. Stout, T. E. A. Stowell, H. Thwaite, C. C. Tudge, *G. E. Vilvandré, L. F. K. Way, C. Witts, R. Yood, W. A. Young.

* M.R.C.S. diploma granted April 14th, 1910.

† L.R.C.P. diploma not yet confirmed.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

D.P.H. (*Part I*).—E. H. Cramb, Jane R. F. Gilmour, Mary P. Graham, J. M. Kelly, D. J. M'Leish, R. A. M. Macleod, M. B. G. Sinnette, R. T. Young W. Young, W. A. Young.

D.P.H. (*both Parts*).—M. Campbell, T. Campbell, J. Davies, W. A. Dickson, A. S. Gordon, W. Grier, S. A. M'Clintock, F. B. Macdonald, W. J. M'Feat, J. Macintyre, L. W. C. Macpherson, G. G. Middleton, Bhola Nath, P. Pattison, O. E. Powell, J. Reid, H. D. Robb, J. Scott, H. R. Sloan, A. S. Walker.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

First College.—S. J. M. Cairns, T. M. Cronin, G. S. Douglas, O. L. Fleming, J. J. G. Harvey, W. Morrow, J. J. Walsh, R. P. Weldon.

Second College.—W. I. Adams, *J. D. Cherry, A. T. Cannon, *T. F. Collins, R. F. J. Griffith, J. R. Kelly, C. F. Dillon-Kelly, B. Kelly, J. S. Levis, M. Murphy, F. A. O'Donnell, T. J. O'Riordan, J. C. Sproule, A. Verling.

Third College.—J. H. Barry, J. Barrett, W. R. Beeston, P. W. Black, B. N. Blood, P. J. Burke, T. T. Buckley, D. F. Curran, J. J. Donegan, P. Daly, J. Geraty, J. M. Gilmore, J. J. Glynn, J. T. Hill, J. Kirker, D. McLaughlin, E. J. B. Moynihan, S. Punch.

Final.—A. M. J. Blake, H. F. Blood, V. J. P. Clifford, P. A. Doyle, E. P. Harding, J. T. Heffernan, A. K. Hogan, H. Hunt, C. Kelsall, D. J. Lyne, J. T. McKee, J. J. O'Connor, L. C. Rorke, H. B. Sherlock, A. H. T. Warnock.

D.P.H. (Both Parts).—W. B. Bannerman, E. H. Brook, E. E. Dickinson, R. T. Edwards, C. C. FitzGerald, W. J. D. Inness, H. P. Lobb, J. K. Patrick, H. J. Raverty, W. de W. Wishart.

* With honours.

Medico-Legal.

RECEIPTS FROM FRIENDLY SOCIETY.

A correspondent writes that he has been informed by the secretary of a friendly society to which he is the surgeon that it is unnecessary to put a receipt stamp on payments made to him for medical services rendered as surgeon when the amount is over £2.

*** This is correct. The officers of friendly societies *duly registered* under the Friendly Societies Acts are exempt from the duty of stamping receipts for payment for duties rendered in their official capacity.

A QUESTION OF PARTNERSHIP.

M. O. H. writes that he proposes to make his assistant a partner by giving him, in addition to his salary, fees for all confinements attended by him, night visits, and inquests, as he is not in a position to buy a share of his practice. He has consulted a solicitor, but the latter seems at a loss as to what bond of partnership he can draw up.

*** Such an arangement is not a partnership, but the granting an assistant other remuneration in addition to his salary. This is not infrequently done in preference to increasing the assistant's salary. If our correspondent wishes to take his assistant into partnership he must make over to him a *share* in the business. Partnership is the relation which exists between persons carrying on a business *in common* with a view to profit. In the case given the assistant is not carrying on a business in common with the other, but altogether on another basis, being in fact no more than the servant of the other.

AN UNREGISTERED CHEMIST.

A correspondent sends us a copy of the *Wednesday Herald*, published at Tottenham and Wood Green, which reports that at Edmonton County Court on Friday, May 6th, a man named Tasker Keys was fined £5 for selling a poison, he being not registered as a pharmaceutical chemist. The defendant is reported to have said in his defence that he was not liable, as he had been a medical practitioner and had obtained his diploma in pharmacy, and that a legally qualified man was exempt from the requirements of the Pharmacy Act. His Honour Judge Tindal Atkinson said he might appeal to the Divisional Court, but the defendant said it was no good his doing that as he was an undischarged bankrupt; he was sorry the case had been brought, as he had been nominated for the Fellowship of the College of Physicians! His Honour imposed a penalty of £5 and costs, but said he would have made it less if the Act had allowed him an option. The defendant declared he would do time rather than pay!

*** The name Tasker Keys does not appear in the *Medical Register*. Had he been registered he would undoubtedly have been exempted under the Act to amend the Pharmacy Act of 1868 (32-33 Vict., cap. 117). We presume his Honour satisfied himself that Mr. Keys was not a registered medical practitioner before imposing the penalty, but we do not understand what ground there was for suggesting that a modified penalty might have been imposed, unless we are to take it as a judicial *obiter dictum* implying that in his Honour's opinion the penalty imposed by the statute is needlessly high. As the individual named is not a registered medical practitioner we do not think he made his case better by claiming to have been a medical practitioner, and his Honour would have performed a public service if he had sifted this claim and shown it to be groundless. The medical profession has good reason to complain of the attitude of minor judicial authorities who seem to have scanty respect for the Medical Acts, and whose sympathies too often appear to be given to quacks.

WORKMEN'S COMPENSATION ACT.

Medical Certificates as to the Nature of the Injury under the Workmen's Compensation Acts.

A correspondent asks the following questions: (1) Is the injured party under an obligation to provide a medical certificate at his own expense? (2) Is the employer, or an insurance company acting for him, bound to pay for this certificate?

*** (1) The injured party must pay the expense of any certificate he requires from his own doctor. (2) The employer, or the insurance company, must pay the expense if they require their own doctor to examine and report on the condition of the injured party, but they cannot be charged for any other certificates (Workmen's Compensation Act, 1897, Schedule I, S. 3).

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

UNQUALIFIED ASSISTANTS.

Country G. P. writes that he is at present employing a senior medical student who has recently failed to pass his final examination, as dispenser and surgical assistant, and he wants to know whether he would be "in order" in asking him to make occasional visits on patients who had been already seen by his employer and to attend midwifery cases.

*** The words used in the warning issued by the General Medical Council are: "That as some registered medical practitioners have been in the habit of employing as assistants in connexion with their professional practice, persons who are not duly qualified or registered under the Medical Acts, and have knowingly allowed such unqualified persons to attend or treat patients in respect of matters requiring professional discretion and skill, and whereas in the opinion of the Council such a substitution of the services of an unqualified person for those of a registered medical practitioner is in its nature fraudulent and dangerous to the public health, any registered medical practitioner who is proved to have so employed an unqualified assistant is liable to be judged as guilty of infamous conduct in a professional respect, and to have his name erased from the *Medical Register*." This declaration is only qualified by the following words: "That this notice does not apply so as to restrict the proper training and instruction of bona fide medical students as pupils or the legitimate employment of dressers, midwives, dispensers and surgery attendants under the immediate personal supervision of a registered medical practitioner." It seems to us that our correspondent may be sailing dangerously near the wind if he proposes to send his dispenser to visit patients and attend midwifery cases. It cannot be pretended that he is merely sent to acquire knowledge, as our correspondent says he is "quite capable of doing this work." This is the plea invariably put forward in defence of the employment of unqualified assistants, but has never been accepted by the General Medical Council, and seems to be entirely inconsistent with the view generally admitted by the medical profession that the passing of a final examination is necessary evidence of fitness to practise.

AFRICAN TROUBLES.

B. S. A.—(1) The position is peculiar, and it is hard for any one living in England to realize the difficulties of practice where it may take ten or twelve days to pay a visit. We therefore are scarcely in a position to say whether C. was justified in the circumstances in recommending the lady to go into A.'s district so that she should be attended by him. If this was done with the view of shifting an irksome responsibility upon A.'s shoulders, it was certainly wrong. (2) We have no means of answering the legal questions put to us by our correspondent, as we are not conversant with the laws under which the Administrator is acting, but we should have thought that the society which employs the medical missionaries in question would have sufficient influence with the directors of the British South African Company to protect them against any injustice, and we should recommend that the grievance should be brought to the notice of the society's committee.

Public Health
AND
POOR LAW MEDICAL SERVICES.

FEES FOR CERTIFICATION OF WANDERING PAUPER LUNATICS.

G. A. J. writes saying he was called to the police station to see a wandering pauper lunatic, and the following morning gave evidence before a magistrate and certified the case for asylum. He says he is now offered a fee of 10s. 6d. by the relieving officer, and asks whether he can claim a higher fee.

*** For attending before a magistrate and certifying the case described *as one fit for asylum* our correspondent is entitled to reasonable remuneration, and the magistrate who acted in the case has the power to order the board of guardians to pay this. The amount usually paid is one guinea, and in our opinion this should be the minimum fee for certifying such cases. Should "G. A. J." have any difficulty in getting this amount he should apply to the magistrate to make an order for the guardians to pay it. In addition to this, we consider that "G. A. J." is entitled to a fee from the police for his visit to the police station at their request on the previous day. The fee paid by the guardians for the certification of lunacy does not include payment for the previous day's services to the police, but is for the special services rendered to the magistrate.

Obituary.

EDWARD CRESSWELL BABER, M.B.,
SURGEON, ROYAL EAR HOSPITAL, LONDON.

WE regret to announce the death of Edward Cresswell Baber, the well-known aural surgeon, which took place on Saturday at his London consulting address in Brook Street, at the age of 59. Mr. Baber resided at Brunswick Square, Hove, and, in addition to an extensive consulting practice, was intimately associated with the principal medical institutions in the district, notably the Special Hospital for Throat and Ear Diseases. He was Surgeon to the Royal Ear Hospital, London. He received his preliminary education at King's College School, London, and studied medicine at St. George's Hospital, where he was formerly House-Surgeon and Demonstrator of Anatomy, also Prizeman and William Brown Scholar. He afterwards continued his studies at Paris and Vienna. He was admitted a Member of the Royal College of Surgeons of England in 1871, and a Licentiate of the Royal College of Physicians of London in 1872. He took the degree of M.B. at the University of London in 1873. Mr. Baber had been President of the Laryngological Society of London, Vice-President of the Otological Society, President of the Brighton and Sussex Medico-Chirurgical Society, Honorary Secretary of the International Otological Congress, 1895, Honorary General Secretary of the International Otological Congress, 1899, and President of the Section of Laryngology and Otology, British Medical Association, 1899. He was the author of numerous contributions to the literature of his special branch of surgery.

ANDREW GILMOUR, L.R.C.P.EDIN., J.P., V.D.,
LINLITHGOW.

WE regret to have to announce the death, after a few days' illness, of Dr. Andrew Gilmour, one of the oldest medical practitioners in Scotland. Dr. Gilmour, while paying a visit to his son-in-law, Dr. MacDonald, Foyers, Inverness-shire, was seized with cerebral haemorrhage, from the effects of which he succumbed after six days' illness, his death occurring on May 9th. Dr. Gilmour while quite a young man came to Linlithgow and commenced practice there. For forty-five years he was a member of the Linlithgow Town Council, and held the position of Provost for twenty years. During his Provostship the Town Council and the community presented him with his portrait in oils. Being a man of active habits and devoted to public life, Dr. Gilmour, after he relinquished the Provostship remained a member of the Town Council, who made him a Police Judge. For many years he continuously represented the burgh at the Convention of Burghs, and at the last annual meeting of that body he was referred to as the Father of the Convention. He held the rank of Surgeon-Lieutenant-Colonel in the old Volunteer Force, receiving the Volunteer decoration. In politics Dr. Gilmour was a Conservative, and did much to further the cause of the party in the burgh. The funeral took place at Linlithgow; the procession was headed by the Freemasons, of which body the deceased was a Past Master. All the shops in the town were closed, and there was present a large concourse of people, especially of the poorer classes, of whom Dr. Gilmour was a great friend.

Medical News.

THE meeting of the Society of Tropical Medicine and Hygiene, fixed for Friday, May 20th, has been postponed to Friday, May 27th, at 8.30 p.m.

THE conference of the Child Study Society, arranged to be held at Tunbridge Wells on May 19th, 20th, and 21st, has, owing to the death of King Edward, been postponed to June 10th and 11th. Copies of rearranged programme can be had on application to Miss Watt, 35, Church Road, Tunbridge Wells.

OWING to the death of His late Majesty King Edward VII, the dinner of the Edinburgh University Club of London, which was arranged for May 27th, has been postponed until Friday, July 22nd.

DR. GEORGE SKENE KEITH, author of *A Plea for a Simple Life* and other well-known works, who died not long ago, left personal estate of the value of £29,919.

THE annual general meeting of the Asylum Workers' Association will be held at 11, Chandos Street, London, W., on May 25th. The President (Sir William Collins, M.P.) will take the chair at 3 p.m.

A COURSE of post-graduate clinical demonstrations will be given at the Manchester Royal Infirmary by the honorary staff on Tuesdays and Fridays, from May 31st to June 23rd inclusive. The course is open to all qualified medical practitioners.

THE dinner of the Post-Graduate College and past and present students of the West London Hospital will be held at the Trocadero Restaurant, Piccadilly Circus, on Wednesday, June 8th, at 7 for 7.30 p.m., when the Duke of Abercorn will take the chair.

AT the meeting of the Medico-Legal Society to be held at 11, Chandos Street, London, W., on May 24th, at 8.15, Dr. Major Greenwood, Honorary Secretary of the Poor Law Medical Officers' Association, will read a paper on the policy of the English Poor Law and its proposed medical reform.

ON Thursday, May 26th, at 6 p.m., a lecture will be given at the Royal Eye Hospital, St. George's Circus, Southwark, by Mr. G. T. Brooksbank James, on binocular vision in its relation to some of the refractive and muscular anomalies of the eye. Any medical students and practitioners interested in the subject are invited to attend.

AN amendment of the law of November 30th, 1892, regulating the practice of medicine in France and its dependencies has recently been promulgated. By its terms it is made compulsory for doctors of medicine, surgeon-dentists, and midwives, before establishing themselves in a place and performing any professional act, to register their titles at the prefecture or subprefecture, and at the civil tribunal of the *arrondissement*, and to have it authenticated with the signature of the mayor. No fees are payable for such registration. In the case of beginners who have not yet received their title or diploma the provisional certificate given to them by a duly authorized faculty or professional school must be registered and signed by the mayor in the same way.

THE next quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at 11, Chandos Street, London, W., on May 24th, at 3 p.m., under the presidency of Professor W. Bevan-Lewis. Dr. Charles Mercier will read a paper on insanity as disorder of conduct; Dr. John Turner one on the examination of cerebro-spinal fluid, with special reference to the diagnostic value of Ross and Jones's test; and Dr. W. H. B. Stoddart will enunciate a theory of the toxic and exhaustion psychoses. In consequence of His late Majesty's death, the usual dinner in the evening will not take place. The General Secretary (Dr. C. Hubert Bond) will be much assisted in arranging the programme for the annual meeting if members desiring to read papers thereat will communicate with him as soon as possible.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

RHEUMATIC asks for information as to what suburbs of London are likely to be most suitable for a rheumatic patient to reside in, with particulars as to nature of the soil, etc. There is a slight preference for western suburbs.

G. R. G. would like to raise the question of the treatment of hay fever by serums or vaccines, as to whether cure or great benefit can be derived from them. If there is some efficient remedy he would be very glad to hear its name and where it may be obtained.

Dr. PERCY NEWELL (St. Leonards-on-Sea) would be much obliged for information on the following points: What the saliva sulphocyanide test in cases of plumbism is. He has consulted several fairly up-to-date textbooks, but cannot find it mentioned.

J. F. M. would be glad to know the significance, with regard to prognosis, of the persistence of a small amount of albumen and casts in the urine of a girl aged 16. In all other respects she enjoys apparently perfect health, is of good colour, active disposition, with a healthy appetite and of somewhat stout build. A slight eczema led to an examination of the urine, which is normal in amount. She had a mild attack of scarlet fever at the age of 7. Is it possible that, although casts are present, the trouble is functional, and may disappear, or is it to be regarded as incipient Bright's disease?

PASTEURIZATION.

PASTEUR would be glad of advice in the choice of an apparatus for pasteurizing or sterilizing milk in quantities of 4 to 6 gallons. For heating purposes gas and electricity are both available.

ANSWERS.

M.D. has not authenticated his communication with his name.

STAFF SURGEON.—Our correspondent might consult *How to Become a Nurse*, by Sir Henry Burdett. New edition. (London: The Scientific Press. 1909. 2s.)

TREATMENT OF RED NOSE.

Dr. ARTHUR J. MATHISON (Wood Green) writes: In answer to query from "Rusticus," I suggest a combination of internal and local treatment. The following would give relief, I think, in most cases: A bismuth, soda, and gentian mixture, containing in each dose 2 minims of carbolic acid, administered shortly before food, and a film of pasta ichthyoresorcin, made, after Unna's formula, by Messrs. Damaney and Co., of Liverpool, applied each night to the nose and surrounding flushed area.

PRACTICE IN CANADA.

H. M.—Geographically the nearest medical school to British Columbia is that carried on in connexion with the University of Manitoba in Winnipeg. Candidates for admission to the register must be armed with certificates of good character, with diplomas in medicine and surgery obtained from bodies imposing a curriculum of not less than four years, and proof of identity. Candidates registered in Great Britain or Ireland prior to June 30th, 1887, and still so registered, and provided with the documents before mentioned, are admitted to the register forthwith. Others must pass an oral and written examination in (1) anatomy, (2) chemistry and public health, (3) physiology and histology, (4) materia medica and therapeutics, (5) medical jurisprudence, (6) theory and practice of medicine and medical pathology, (7) theory and practice of surgery and surgical pathology, (8) clinical medicine, (9) clinical surgery and surgical anatomy, (10) obstetrics and diseases of women and children, (11) urinary analysis and clinical microscopy. The fee on admission to the register, which is maintained by the College of Physicians and Surgeons, Victoria, B.C., is 100 dollars, a further 2.50 dollars being payable each year.

No one should proceed to British Columbia without first ascertaining from the secretary of the college information as to the precise tests which he personally will have to undergo, since matters in that Province, as also throughout Canada in general, are in a state of transition.

LETTERS, NOTES, ETC.

"DEMONIACAL POSSESSION": A DISCLAIMER.

Dr. C. WILLIAMS (Liverpool) writes: With reference to a short paragraph which appeared in some of the Liverpool newspapers this week alluding to an address which I delivered in London last Monday on the subject of demoniacal possession, I should like it to be known that the paragraphs in question were sent to those papers without my consent or approval; that the wording of some of them was not strictly correct; and that I am very sorry such notices appeared.

GERMAN RESEARCHES ON TUBERCULOSIS: A CORRECTION.

IN the paragraph entitled "German Research on Tuberculosis," published in the BRITISH MEDICAL JOURNAL of April 2nd, 1910, p. 836, we regret that, by inadvertence, the words "feeding" and "inhalation" in the second column, line 20 from the top, were transposed. The sentence should read as follows: "Drs. Weber and Titze call attention to the work of numerous investigators, which shows that experimental infection with tubercle bacilli can be produced more readily by inhalation than by feeding."

THE DANGERS OF THE ARYLARSONATES.

MAJOR F. J. W. PORTER, R.A.M.C., writes: The statement of Major French in the JOURNAL of April 2nd, that from twenty to twenty-five deaths have resulted from the use of grey oil, is, I think, calculated to alarm those who contemplate using this method of treating syphilis. So far as I know, the majority of these deaths occurred many years ago, and were the result of overdoses of grey oil. In the army this material used to be supplied in bottles holding about 8 oz., from which the smaller wide-mouth dispensing bottles had to be filled. It sometimes happened that excessive heat was applied to liquefy the contents of the large bottles, and proper care not taken to stir the cream thoroughly before pouring it into the 1 oz. dispensing bottles. The result was that the upper portion of the contents of the large bottles contained too little and the lower layers too much mercury. In the same manner, if great care was not taken to keep the cream thoroughly stirred while using it from the dispensing bottle, the recipients of the lower strata were very likely to get more than was intended. In addition to this, it is only within the last few years that this method of treatment has been systematized in the army by making use of definite courses of a given number of injections—that is, ten or twelve of 1 grain weekly, for a first course; five of ½ grain weekly after an interval of two months; five of ½ grain weekly after another rest of three months, and so on. It is advisable also to reject the dregs of the dispensing bottle. Since this plan has been adopted, and due care taken regarding thorough stirring and not overheating of the cream, one has not heard of fatal cases of poisoning in the army at any rate. In the early days, after Colonel Lambkin published his first paper, we had to make the cream ourselves, and the only apparatus available in India consisted of an ordinary pestle and mortar. Under these circumstances an occasional case of overdose can easily be understood. For naval and military practice, the intramuscular method is ideal, and has perhaps more adherents than any other.

My experience of soamin has not been large, but it has been very unsatisfactory. Out of 10 cases (who had received no mercury previously) I had symptoms of slight arsenical poisoning in three; 9 developed bad secondary symptoms *immediately* after a course of ten injections, a result I have never seen after a first course of mercurial injections. Unless some idiosyncrasy exists, I think it is better to stick to a well tested remedy like mercury for the treatment of syphilis.

THE CAUSATION OF SEX.

J. A. W. writes: I have read Mr. Stark's letter with much interest. The following quotation from Maeterlinck's *Life of the Bee* may be appropriate. About the queen he writes: To become as was the mother before her it is essential that she should meet the male within the first twenty days of her life. Should the event for some reason be delayed beyond the period her virginity becomes irrevocable. And yet we have seen that she is not sterile, virgin though she be. The virgin queen is able to lay, but from all the eggs she will deposit in the cell there will come *males alone*.

BISMUTH HAIR DYE.

H. A. C. writes: I am not infrequently asked by patients if I can recommend a satisfactory hair dye, so that I read with interest Dr. Falkiner's letter to the *Lancet*, 1910, vol. i, p. 217. I find it wise not to recommend any dye of which I have not some practical experience, and I have found the bismuth nitrate and sulphurea solutions altogether disappointing. When used in the ordinary way they produce no appreciable result on the hair. To have any effect they should be used *hot*, and the part afterwards covered with protection, so that for practical purposes they are useless. When the bismuth nitrate solution is used with a solution of sodium sulphide instead of sulphurea, although the hair is at once darkened, so much sulphuretted hydrogen is generated that no lady could use the dye with comfort to herself or her friends.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.